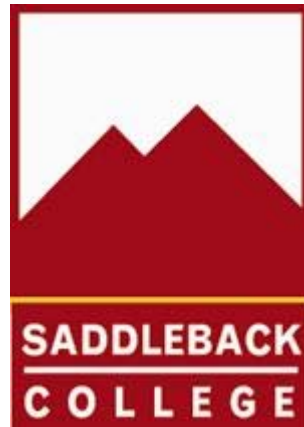


Saddleback College Program Review for Computer Maintenance Technology



Submitted 11/30/07

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Program Review Team Members and Approvals

Program Review Team Chair:

Eugene J. Evancoe

Program Review Team Members:

Michael Bartulis

Mark Sierakowski

Thomas Smith

Approvals:

Division Dean

Program Review Chair

Academic Senate President

Vice President of Instruction

Program Review Checklist

Date Completed	Action
9/20/07	Contact Program Review Chair for orientation
9/20/07	Form Program Review Team
10/15/07	Gather documents (Org Chart/Staffing Profile/SLO Assessment Forms/Data Sets)
10/20/07	Solicit input from faculty and students
11/01/07	Determine if additional research is needed
11/01/07	Contact College Research Analyst if necessary
11/15/07	Write Program Review report
11/30/07	Submit report to Dean and Program Review Chair for approval
	Report submitted to Academic Senate for approval
	Report submitted to Office of Instruction for approval
	Report submitted to College President and the Office of Institutional Effectiveness
	Report posted to the IE web site
	Open, formal presentation to the Program Review Committee and other interested parties

Section I: Program Overview

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

The mission of the Computer Maintenance Technology program is to provide high quality technical instruction, career preparation, and career upgrading skills in Computer Maintenance Technology which are technologically up to date and relevant to the needs of the local computer industry. In particular, the program serves two distinct purposes:

- 1) Provide technical/vocational certificates in Computer Maintenance Technology for persons intending to work in the field.
- 2) Provide skill updating and upgrading for persons in the computer maintenance industry or related fields.

The mission of the program links directly to both the mission of Saddleback College and its goals. In the context of computer maintenance, the program mission, which was described specifically above, also fulfills the mission of the College by providing access to learning opportunities for student success, fostering intellectual growth, individual expression, and character development, and supporting a dynamic and diverse environment of innovation and collegiality. The Computer Maintenance Technology courses and program, with varied learning experiences in the classroom and laboratories, directly support the College mission.

Two goals of Saddleback College are met by the Computer Maintenance Technology courses and the program. Supporting the second College goal, the Computer Maintenance Technology program also provides high quality courses and certificates to enable students to pursue their educational objectives and career goals in computer maintenance and related fields. Many of today's occupations involve computer maintenance or are closely related to the field, and the program enables a variety of students to gain knowledge they desire about computer maintenance by completing a full certificate or individual courses of interest. The Computer Maintenance Technology program leads to the Associate of Arts (AA) and Associate of Science (AS) degrees. Computer maintenance courses can accompany the required general education courses to meet the complete degree requirements. Computer Maintenance Technology is a possible major program at the College as part of either the AA or AS degree.

Supporting the seventh College goal, the Computer Maintenance Technology program provides continuing education in computer maintenance, including courses for skills upgrading and retraining for professionals in the computer maintenance industry and related fields. Some students are also interested in the field for general knowledge or as a hobby, and our courses also provide life-long learning opportunities in computer maintenance.

B. Historical Background and Unique Characteristics of the Program

The Computer Maintenance Technology program has existed formally been at Saddleback College for about 5 years. Prior to that, individual courses in computer maintenance and repair were offered under the title of Electronic Service Technology, part of the Electronic Technology program. The program has gone through numerous changes and updates in both curriculum and equipment in accordance with technological developments in the computer maintenance field. At the same time, the beginning fundamentals courses have stayed much the same. The program will continue to include the fundamentals and also areas which will be updated or new as technology in computer maintenance continually changes.

The Computer Maintenance Technology certificate includes our own hardware courses and two software courses from Computer Information Management (CIM). All courses include approximately equal classroom and laboratory hours. The program is distinct from others which are mainly theoretical (university computer engineering programs), and others at community colleges and technical institutes which are much less rigorous in theory. Both basic principles and hands-on laboratory skills are included in a balance primarily to prepare students for entry level employment as a computer maintenance technician. The laboratory exercises and equipment also include both basics and more advanced aspects for modern technological subjects in computer maintenance. Our A+ Test Preparation course serves both students in the program and other computer professionals with a high quality, low cost alternative to similar courses at private institutions.

C. Progress Since the Last Program Review

This is the first program review of Computer Maintenance Technology.

D. Current Strengths, Opportunities, and Challenges

The current strengths of the program are as follows:

- 1) High quality courses in both the fundamentals and advanced topics which cover both the basic principles and practical hands-on aspects of the subjects.
- 2) Lab equipment and computers are sufficient to accommodate most aspects of the present computer maintenance courses.
- 3) Many of the instructors have extensive industry experience in computer maintenance.

The main opportunities are as follows:

- 1) We can expand, update, and add some advanced courses without extensive cost using the facilities we have presently and some upgrades to equipment and computers. If necessary, we can charge a modest materials fee to the associated courses.
- 2) With the general working world becoming increasingly more computer-oriented, more persons will need knowledge of basic computer maintenance, and we can meet that need with our courses which include both basic principles and hands-on aspects. Local companies regularly provide input and critique of our curriculum as it pertains to their company needs.

The main challenges are as follows:

- 1) Increase and stabilize the enrollments in all courses so that a regular and predictable sequence courses can be offered so that students can plan for and complete the certificates in a timely manner. For the past few years lower enrollments in the advanced classes have resulted in less frequent offerings, extending completion times for students and/or requiring them to take courses out of sequence to stay active in the program.
- 2) Offer updated and new advanced classes in accordance with industry changes and needs and advisory committee recommendations. When required, acquire additional equipment.
- 3) Replace existing lab computers and equipment which is out of date, no longer serviceable because of age, unable to run current software, or lacking hardware needed to study current topics.
- 4) Expand our pool of part-time instructors for all classes to cover possible absences in the future and the addition of specialized courses.
- 5) Determine appropriate audiences of potential students and market and publicize the program to them.

Section II: Review Report

A. Faculty and Staff

The staffing structure for the Computer Maintenance Technology program includes one full-time professor and department chair shared with Electronic Technology (Eugene Evancoe), one quarter ($\frac{1}{4}$) time lab assistant who is also shared with Electronic Technology (Tom Smith), and three part-time faculty members. The exact percentage of time spent on Computer Maintenance Technology versus Electronic Technology varies slightly for both persons according to the number and nature of classes offered in each program each semester. The program organizational chart and staffing structure are included later in this report. The current staffing structure is adequate at present but insufficient for any significant growth. Additional classes could be handled by part-time faculty, but more support by the lab technician will also be required. The present ratio (in Fall 2007) of full-time to part-time faculty is about 2.5 to 1. This ratio is satisfactory, with the present class offerings, to fulfill the mission and goals of the program.

To make the Computer Maintenance Technology program more effective in the future as growth occurs and new and more complex courses, equipment, and computers are added, more support by the laboratory technician will be required. We estimate this need at about 6 hours more per week (includes both Computer Maintenance Technology and Electronic Technology), to bring the technician to a minimum of 16 hours total per week for both programs.

B. Curriculum and Instruction

The course offerings in Computer Maintenance Technology primarily provide paths to AS and AA degrees (Computer Maintenance Technology is a major) and a technical/vocational certificate in Computer Maintenance Technology. The course offerings adequately support the mission and goals of the program and College. Timely offering of advanced courses is very important to student success and maintaining a high quality academic program.

The program's offerings are evaluated by course evaluation forms completed by students at the end of courses, informal feedback from students continuously during courses, review by our advisory committee, and the success rate of accomplishing our Student Learning Outcomes (SLO's). We have used and are actively using SLO's for both assessment and improvement of our courses and the Computer Maintenance Technology program as a whole. We are in only the second year of using SLO's for this program, but so far the results have provided very useful data to see our successes and strengths and also areas that need more attention. With each year we will gather more information about different aspects of courses so that we can continually find what to retain, revise, delete, and add at the course and program levels.

In order to improve the instruction in Computer Maintenance Technology courses, we have utilized various technology improvements, such as computer aided analysis programs and online learning resources which accompany most of our textbooks. These resources include PowerPoint slides and animations to accompany our class presentations, practice tests, catalogs, application notes, and technical articles from the websites of computer maintenance companies and vendors. Online learning sources (for example, HowStuffWorks.com) are also frequently used, as well as public domain software to test various aspects of computer performance.

The program is strong and current in curriculum, but our lab computers are unable to run some important current software and study many important hardware topics. Many of our instructors have direct industry experience in computer maintenance and bring practical examples and insight to the classroom. Our classroom is adequately equipped with computer resources, internet access, computer-aided software, and overhead projectors so that our instructors can use current technology in instruction. Presently we have only one classroom, and if more than one class (Electronics and/or Computer Maintenance) needs the classroom at the same time (which often happens with evening classes), one of the classes must use a lab as the classroom, a less than desirable learning environment for those students. We minimize, but cannot always avoid, concurrent classes which need a classroom, and we need a second classroom or one of the labs to be reconfigured, so that the room could double as a lab and classroom.

In order for the program to be more effective we need the continual updating of the technical content of most courses and adding and deleting advanced computer maintenance courses according to technology changes and updates and changes in the needs of local computer maintenance companies. Often this will require updated or additional hardware or lab equipment. We will also need to recruit instructors with expertise in each technical area.

C. Student Success

The students in the Computer Maintenance Technology program cover a wide age span and have diverse educational goals. According to the Data Set, the age category with the largest percentage of students is 18-21, followed closely by 36-50. Other than Undecided, acquiring or updating job skills was the most popular educational goal.

Some students come from College support services, such as DSPS and EOPS, and these students are supported and accommodated in the Computer Maintenance Technology classes. Students with learning needs in topics being studied are referred to tutoring services on campus (Learning Assistance Program). We have participated in the Early Alert program in the past, but our experience is that the time of notification is too late for recovery. Since the computer maintenance classes are serial in nature (each week builds on the previous week), by the time the Early Alert is received by the student, it is too late in the semester for the assistance to have any meaningful effect. We try to keep each student apprised of pending difficulty right away so that help can be offered before it is too late.

The main strength of the Computer Maintenance Technology program in student success is the comparatively small size of classes which allow personal attention to students by instructors. We monitor the progress and possible learning difficulties of each student and provide or refer the appropriate assistance. The size allows good class interaction and communication and addressing of difficulties with particular topics. Our difficulties in student success are the widely different academic backgrounds of students in computer and general study skills and also the differences in motivation and academic work ethic. We are continually evaluating and the adjusting the rigor and pace of the classes to keep the academic integrity of each course while trying to accommodate the learning needs of most of the students in each particular class. According to the Data Set, our student success and retention rates have varied considerably over the past five years with no apparent pattern, but we consider the average success rate of about 72% and average retention rate of about 92% to be indicative of the high quality of education and service we are providing our students.

D. Facilities, Technical Infrastructure, and Resources

As stated previously, a large negative is that we have only one computer maintenance classroom and the seating arrangement of the labs is not good for classroom presentations., If more than one class (Computer Maintenance or Electronics) needs the classroom at the same time (which often happens with evening classes), usually the class with a smaller enrollment is moved to a lab, resulting in a less than desirable learning environment for those students. We need a second classroom or one of the labs to be reconfigured, which would require replacing the existing lab benches with a different style and arrangement so the room could be used as either a lab or classroom. The present setup of labs having benches with high tops is not good for classroom presentations and activities. The present amount of lab space is adequate unless we add a specialty course that requires a dedicated lab.

The information technology presently available is adequate for the program. The library holdings presently available are adequate for the program.

The present lab equipment is marginally adequate for the program, and there is the constant challenge and need of maintenance and repair of the lab computers and staying reasonably current with computer. Often particular computers and/or their individual components are discontinued by their manufacturer. Consequently, it becomes very difficult or impossible to get the equipment repaired or order replacement parts. Since the computer industry changes very quickly, often our computers cannot run the latest software which is in widespread use in the computer industry and do not contain some hardware items common in current computers. Presently our computers for the fundamentals classes have been “trickle downs” received after other campus computers are replaced with more modern models. Since the relevance and quality of the computer maintenance classes depend on being reasonably current in technology, our lab computers should be replaced on the same schedule as all other campus computers, rather than being “trickle downs” which are usually out of date for current computer technology. Specifically, the additional hardware capabilities we need immediately are as follows: serial ATA hard drives and compatible motherboards, DVD Read/Write drives,

additional wireless networking equipment, and computers capable of running the Microsoft Vista Professional Edition operating system.

E. Service, Community Outreach, and Economic Development (optional)

The Computer Maintenance Technology program reaches out to the local computer industry and tries to meet the employment and training needs of the companies through our program. The Computer Maintenance Technology advisory committee includes representatives from about five local computer companies. The committee meets annually with our faculty and staff to review the curriculum and lab facilities of Computer Maintenance Technology program and give recommendations in relation to present and future industry needs for computer maintenance technicians. Sometimes Saddleback College receives donations or discounts on laboratory equipment and computers, invitations for class field trips at company sites, and announcements of full and part-time employment opportunities for our students. The companies on our advisory committee also announce our program and classes to employees.

Our faculty also publicizes the Computer Maintenance Technology program at career centers at local high schools. There are no longer any computer maintenance programs at local high schools, so we have no direct way to recruit high school students into the Computer Maintenance Technology program. The local ROP has a beginning computer maintenance class that articulates with our first class, and that results in a few students joining our program at the intermediate stage each year. We also participate in various other community outreach programs, such as high school senior and parent events at Saddleback College. Our program and classes are also announced at local libraries and computer stores.

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Section III: Needs Assessment

A. Human Resource Needs

We need an increase in the weekly support of the lab technician by about 6 additional hours and additional instructors for new courses when they are offered. The present level of one full time faculty is adequate.

B. Instructional Needs

Present instructional support is adequate.

C. Research Needs

We need research of the local computer maintenance industry with respect to employment projections and training needs of employees and also to recruit new members of the Computer Maintenance Technology advisory committee. We also need to determine if other programs at Saddleback College could include some of our classes as part of their certificates or programs.

D. Technical, Equipment and Other Resource Needs

We need to update our computers and lab equipment continually to keep up with current computer technology, We need to establish a replacement cycle for all computers according to the support timelines of the equipment manufacturers (equipment must be replaced when it is not longer supported) in accordance with the normal replacement schedule of campus computers (replacement no more less frequently than every 3 years).

E. Facilities Needs

We need one additional classroom or a lab reconfigured to double as a classroom and lab so that concurrent classes which both need a classroom can be offered. We also need to maintain two computer maintenance labs. If a specialty class is added, that may require a dedicated facility or new equipment for an existing lab.

F. Marketing and Outreach Needs

The program and classes needs to be better marketed and publicized to sources of potential students, such as computer maintenance companies, high schools and ROP's, and other appropriate places in the local community. This has been done almost exclusively by the program faculty in the past. This program is a vocational program that is not transferable and does not contain any general education classes, so building enrollments and recruiting students will always be needed. Additional assistance and support of at least 2 hours per week is needed from the college because of the limitations of faculty in time and access to data and

resources needed to effectively recruit students continually. The program faculty will continue to recruit students, but we need support from the College for a more organized, consistent, and thorough approach to our enrollment and recruiting challenges.

Section IV: Appendices

A. Program Organizational Chart

Division of Advanced Technology and Applied Science
(Dean Don Taylor)

Computer Maintenance Technology Program
(Department Chair Eugene Evancoe)

Faculty
(Full time Eugene Evancoe,
Part time Michael Bartulis, Part time Mark Sierakowski,
Part time Elisia Sierakowski)

Part Time Lab Technician
(Tom Smith)

B. Five-Year Program Staffing Profile

Five-Year Program Staffing Profile

Position	Staffing Levels for Each of the Previous Five Years					% Change from Year 1 to Year 5
	2002	2003	2004	2005	2006	
Administration (ATAS Dean)	1	1	1	1	1	0
Bargaining Classified Staff FT	0	0	0	0	0	0
Bargaining Classified Staff PT	0.125	0.125	0.125	0.125	0.125	0
Non-bargaining Classified Staff FT	0	0	0	0	0	0
Non-bargaining Classified Staff PT	0	0	0	0	0	0
Student Workers	0	0	0	0	0	0
Faculty FT	0.5	0.5	0.5	0.5	0.5	0
Faculty PT	0.4	0.4	0.5	0.5	0.5	25

C. SLO Assessment Forms

**Computer Maintenance Technology
05/07**

I Expanded Statement of Institutional Purpose	II Program Student Learning Outcomes	III Assessment Method and Criteria for Success	IV Assessment Results	V Use of Results
<p>Computer Maintenance Technology program:</p> <p>The program purpose pertains to items 2 and 7 of the general Saddleback College goals:</p> <p>2: Provide a comprehensive, broad range of high-quality courses and programs to enable students to pursue their educational objectives and career goals.</p> <p>7: Provide opportunities in continuing education and community services,</p>	<p>1. Graduates of the Computer Maintenance Technology certificate program who desire certification will be certified within one year of completion of the CMT certificate.</p> <p>2. Students who complete CMT classes will be satisfied with the information and concepts they gained from each class in the program.</p>	<p>1. 80% of the students who complete the CMT certificate program and take the A+ certification exam will become certified within one year of completion of the CMT certificate.</p> <p>2. At the end of each CMT class a student satisfaction survey will given and the results tabulated. For each class at least 80% of the students surveyed will indicate that they are satisfied.</p>	<p>1. 100% of students who took the A+ exam during the 2006-07 school year passed as reported by COMPTIA (the testing agency).</p> <p>2. 100% of respondents indicated satisfaction when assessed by the distribution of a generic survey at the end of the 2006-07 school year.</p>	<p>1. We were pleased that we met more than our expected outcome. We plan to continue to monitor results. No changes needed at present.</p> <p>2. We are meeting our objective with this outcome; we will continue to monitor student satisfaction and academic needs within the classes</p>

I	II	III	IV	V
Expanded Statement of Institutional Purpose	Program Student Learning Outcomes	Assessment Method and Criteria for Success	Assessment Results	Use of Results
<p>including courses for skills upgrading and retraining for professionals and life-long learning for older adults.</p> <p>Specifically, the CMT program provides quality technical instruction, career preparation, and career upgrading skills in Computer Maintenance Technology.</p>	<p>3. Students who complete the second computer maintenance class (CMT 225) will be able to correctly select parts from catalogs to build a personal computer.</p>	<p>3. At the end of the CMT 225 class each student will be given a technical specification for a personal computer and required to select parts to build it to meet the specs. The results will be evaluated and tabulated according to a faculty designed scoresheet. At least 80% of the students will receive a score of at least 90% on the evaluation.</p>	<p>3. During the 2006-07 school year, 83% of the students who participated in the project received a score of at least 90%.</p>	<p>in the program.</p> <p>3. We just met our expected outcome. We will continue to monitor results and look for ways to improve.</p>

I	II	III	IV	V
Expanded Statement of Institutional Purpose	Program Student Learning Outcomes	Assessment Method and Criteria for Success	Assessment Results	Use of Results

D. Data Sets

The following pages include:

- 1. Course Section Count**
- 2. C1 & End of Term Headcount**
- 3. Overview of Courses, Grades, Success/Retention**
- 4. Course Grades, Success/Retention**
- 5. Computer Maintenance Technology Students' Duplicated Headcount**
 - a. Gender**
 - b. Zip Code**
 - c. Age Groups**
 - d. Ethnicity**
 - e. Educational Goal**
- 6. Awarded Degrees and Certificates for Computer Maintenance Technology**

**Data Source: SOCCCD Management Information System (MIS) Data Warehouse
October - November 2007**

Prepared by Shouka Torabi, Research and Planning Specialist, Saddleback College

Section Count

**Computer Maintenance Technology
Course and Section Count by Term and Year**

	Fall					Summer				Spring					
	2002	2003	2004	2005	2006	2003	2004	2005	2006	2002	2003	2004	2005	2006	2007
	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count	Section Count
CMT 215	1	0	0	0	0	0	0	0	0	2	1	0	1	1	1
CMT 220	2	2	2	2	2	0	0	0	0	0	1	1	1	1	1
CMT 225	0	0	0	0	0	0	0	0	0	1	1	2	2	2	2
CMT 230	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0
CMT 235	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1
Total	3	2	3	3	3	1	1	1	1	3	3	3	4	4	5

Census Headcount

**Computer Maintenance Technology
C1 Headcount by Course/Term/Year**

	Fall					Summer				Spring					
	2002	2003	2004	2005	2006	2003	2004	2005	2006	2002	2003	2004	2005	2006	2007
	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount	C1 Headcount
CMT 215	13	.	.	.	.	.	.	.	.	12	9	.	16	6	14
CMT 220	58	53	50	34	49	.	.	.	.	.	21	15	24	16	10
CMT 225	.	.	.	.	.	.	.	.	.	22	19	32	31	26	32
CMT 230	.	.	.	.	.	14	20	24	12	.	.	.	.	.	.
CMT 235	.	.	16	10	14	.	.	.	.	.	.	.	.	.	8
Total	71	53	66	44	63	14	20	24	12	34	49	47	71	48	64

End of Term Count

**Computer Maintenance Technology
End of Term Enrollment by Course/Term/Year**

	Fall					Summer				Spring					
	2002	2003	2004	2005	2006	2003	2004	2005	2006	2002	2003	2004	2005	2006	2007
	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment	End of Term Enrollment
CMT 215	13	0	0	0	0	0	0	0	0	12	9	0	16	6	14
CMT 220	58	55	50	34	49	0	0	0	0	0	21	15	24	16	10
CMT 225	0	0	0	0	0	0	0	0	0	22	19	32	31	26	32
CMT 230	0	0	0	0	0	14	20	24	12	0	0	0	0	0	0
CMT 235	0	0	16	10	14	0	0	0	0	0	0	0	0	0	8
Total	71	55	66	44	63	14	20	24	12	34	49	47	71	48	64

Summary of All Courses by Grade/Success/Retention

Computer Maintenance Technology Summary of All Courses by Grade/Success/Retention

		Grades										success	retention	
		A	B	C	CR	D	F	I	NC	W	XX	Total		
		Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Percent	Percent
2002	Spring	13	11	5	0	1	2	0	0	2	0	34	85.3%	94.1%
	Fall	23	11	4	5	1	9	1	0	14	3	71	60.6%	80.3%
2003	Spring	18	9	3	3	3	5	0	0	6	2	49	67.3%	87.8%
	Summer	4	3	6	0	0	0	0	0	1	0	14	92.9%	92.9%
	Fall	14	17	6	4	2	2	1	0	3	6	55	74.5%	94.5%
2004	Spring	16	17	5	2	3	3	0	0	1	0	47	85.1%	97.9%
	Summer	5	11	1	2	0	0	0	0	0	1	20	95.0%	100.0%
	Fall	16	6	9	15	0	6	0	0	8	6	66	69.7%	87.9%
2005	Spring	23	11	14	3	3	8	0	0	7	2	71	71.8%	90.1%
	Summer	11	4	4	1	0	1	0	0	2	1	24	83.3%	91.7%
	Fall	10	9	7	2	0	5	3	0	2	6	44	63.6%	95.5%
2006	Spring	10	16	5	2	3	9	0	0	3	0	48	68.8%	93.8%
	Summer	8	1	1	0	1	1	0	0	0	0	12	83.3%	100.0%
	Fall	17	10	16	1	2	11	0	1	2	3	63	69.8%	96.8%
2007	Spring	15	14	16	1	8	3	0	0	6	1	64	71.9%	90.6%

Grade XX = None of the above/unknown.

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, XX)

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 duplicated with A, B, C, D, F, CR, NC, I, XX) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I, XX).

Summary of CMT 215, CMT 220, CMT 225, CMT 230, & CMT 235 by Grade/Success/Retention

Computer Maintenance Technology Courses by Grade/Success/Retention

		Grades											success	retention	
		A	B	C	CR	D	F	I	NC	W	XX	Total			
		Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Percent	Percent	
CMT 215	2002	Spring	3	2	3	0	1	2	0	0	1	0	12	66.7%	91.7%
		Fall	3	2	2	0	0	2	0	0	4	0	13	53.8%	69.2%
	2003	Spring	2	1	0	0	1	2	0	0	1	2	9	33.3%	88.9%
	2005	Spring	3	1	3	0	2	3	0	0	3	1	16	43.8%	81.3%
	2006	Spring	2	1	0	1	1	0	0	0	1	0	6	66.7%	83.3%
	2007	Spring	1	1	6	0	3	1	0	0	2	0	14	57.1%	85.7%
CMT 220	2002	Fall	20	9	2	5	1	7	1	0	10	3	58	62.1%	82.8%
	2003	Spring	9	3	2	0	1	2	0	0	4	0	21	66.7%	81.0%
		Fall	14	17	6	4	2	2	1	0	3	6	55	74.5%	94.5%
	2004	Spring	4	5	1	1	2	1	0	0	1	0	15	73.3%	93.3%
		Fall	16	6	9	3	0	6	0	0	7	3	50	68.0%	86.0%
	2005	Spring	8	5	3	2	1	3	0	0	2	0	24	75.0%	91.7%
		Fall	5	7	7	2	0	5	3	0	2	3	34	61.8%	94.1%
	2006	Spring	3	4	0	0	1	6	0	0	2	0	16	43.8%	87.5%
		Fall	11	9	14	1	2	9	0	1	2	0	49	71.4%	95.9%
	2007	Spring	1	3	2	0	1	1	0	0	2	0	10	60.0%	80.0%
CMT 225	2002	Spring	10	9	2	0	0	0	0	1	0	22	95.5%	95.5%	
	2003	Spring	7	5	1	3	1	1	0	1	0	19	84.2%	94.7%	
	2004	Spring	12	12	4	1	1	2	0	0	0	32	90.6%	100.0%	
	2005	Spring	12	5	8	1	0	2	0	0	2	1	31	83.9%	93.5%
	2006	Spring	5	11	5	1	1	3	0	0	0	0	26	84.6%	100.0%
	2007	Spring	9	8	7	1	3	1	0	0	2	1	32	78.1%	93.8%
CMT 230	2003	Summer	4	3	6	0	0	0	0	1	0	14	92.9%	92.9%	
	2004	Summer	5	11	1	2	0	0	0	0	1	20	95.0%	100.0%	
	2005	Summer	11	4	4	1	0	1	0	0	2	1	24	83.3%	91.7%
	2006	Summer	8	1	1	0	1	1	0	0	0	0	12	83.3%	100.0%
CMT 235	2004	Fall	0	0	0	12	0	0	0	1	3	16	75.0%	93.8%	
	2005	Fall	5	2	0	0	0	0	0	0	3	10	70.0%	100.0%	
	2006	Fall	6	1	2	0	0	2	0	0	3	14	64.3%	100.0%	
	2007	Spring	4	2	1	0	1	0	0	0	0	8	87.5%	100.0%	

Grade XX = None of the above/unknown.

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, XX)

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 duplicated with A, B, C, D, F, CR, NC, I^a, XX) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I, XX).

Gender by Year/Term

Computer Maintenance Technology Gender by Year/Term Duplicated Headcount

		F		M		Total	
		Count	Row N %	Count	Row N %	Count	Row N %
2002	Spring	6	17.6%	28	82.4%	34	100.0%
	Fall	9	12.7%	62	87.3%	71	100.0%
2003	Spring	4	8.2%	45	91.8%	49	100.0%
	Summer	0	.0%	14	100.0%	14	100.0%
	Fall	8	14.5%	47	85.5%	55	100.0%
2004	Spring	7	14.9%	40	85.1%	47	100.0%
	Summer	2	10.0%	18	90.0%	20	100.0%
	Fall	11	16.7%	55	83.3%	66	100.0%
2005	Spring	9	12.7%	62	87.3%	71	100.0%
	Summer	2	8.3%	22	91.7%	24	100.0%
	Fall	6	13.6%	38	86.4%	44	100.0%
2006	Spring	6	12.5%	42	87.5%	48	100.0%
	Summer	0	.0%	12	100.0%	12	100.0%
	Fall	6	9.5%	57	90.5%	63	100.0%
2007	Spring	7	10.9%	57	89.1%	64	100.0%

Courses by Zip Code

Computer Maintenance Technology by Zip Code Duplicated Headcount

		Saddleback		Irvine		Out of District		Total	
		Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
2002	Spring	33	97.1%	0	.0%	1	2.9%	34	100.0%
	Fall	66	93.0%	1	1.4%	4	5.6%	71	100.0%
2003	Spring	42	85.7%	2	4.1%	5	10.2%	49	100.0%
	Summer	14	100.0%	0	.0%	0	.0%	14	100.0%
	Fall	49	89.1%	0	.0%	6	10.9%	55	100.0%
2004	Spring	44	93.6%	1	2.1%	2	4.3%	47	100.0%
	Summer	20	100.0%	0	.0%	0	.0%	20	100.0%
	Fall	59	89.4%	1	1.5%	6	9.1%	66	100.0%
2005	Spring	62	87.3%	5	7.0%	4	5.6%	71	100.0%
	Summer	22	91.7%	0	.0%	2	8.3%	24	100.0%
	Fall	36	81.8%	2	4.5%	6	13.6%	44	100.0%
2006	Spring	41	85.4%	3	6.3%	4	8.3%	48	100.0%
	Summer	12	100.0%	0	.0%	0	.0%	12	100.0%
	Fall	55	87.3%	1	1.6%	7	11.1%	63	100.0%
2007	Spring	58	90.6%	1	1.6%	5	7.8%	64	100.0%

Age Group Distribution by Year/Term

**Computer Maintenance Technology
Age Group Distribution by Year/Term
Duplicated Headcount**

		Age Groups														Total	
		Below 17		18-21		22-25		26-35		36-50		51-65		Over 65			
		Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %		
2002	Spring	1	2.9%	7	20.6%	4	11.8%	4	11.8%	13	38.2%	4	11.8%	1	2.9%	34	100.0%
	Fall	5	7.0%	20	28.2%	3	4.2%	19	26.8%	17	23.9%	4	5.6%	3	4.2%	71	100.0%
2003	Spring	2	4.1%	12	24.5%	3	6.1%	4	8.2%	17	34.7%	8	16.3%	3	6.1%	49	100.0%
	Summer	1	7.1%	0	.0%	2	14.3%	2	14.3%	9	64.3%	0	.0%	0	.0%	14	100.0%
2004	Fall	2	3.6%	26	47.3%	4	7.3%	9	16.4%	5	9.1%	4	7.3%	5	9.1%	55	100.0%
	Spring	2	4.3%	19	40.4%	3	6.4%	6	12.8%	10	21.3%	5	10.6%	2	4.3%	47	100.0%
	Summer	1	5.0%	3	15.0%	4	20.0%	2	10.0%	7	35.0%	3	15.0%	0	.0%	20	100.0%
2005	Fall	5	7.6%	23	34.8%	6	9.1%	7	10.6%	18	27.3%	5	7.6%	2	3.0%	66	100.0%
	Spring	2	2.8%	31	43.7%	6	8.5%	1	1.4%	17	23.9%	10	14.1%	4	5.6%	71	100.0%
	Summer	1	4.2%	5	20.8%	3	12.5%	3	12.5%	9	37.5%	1	4.2%	2	8.3%	24	100.0%
2006	Fall	1	2.3%	25	56.8%	3	6.8%	7	15.9%	3	6.8%	4	9.1%	1	2.3%	44	100.0%
	Spring	1	2.1%	20	41.7%	4	8.3%	6	12.5%	14	29.2%	2	4.2%	1	2.1%	48	100.0%
	Summer	0	.0%	2	16.7%	2	16.7%	3	25.0%	4	33.3%	1	8.3%	0	.0%	12	100.0%
2007	Fall	2	3.2%	34	54.0%	6	9.5%	6	9.5%	13	20.6%	2	3.2%	0	.0%	63	100.0%
	Spring	2	3.1%	33	51.6%	7	10.9%	6	9.4%	11	17.2%	5	7.8%	0	.0%	64	100.0%

Ethnicity by Year/Term

**Computer Maintenance Technology
Ethnicity by Year/Term
Duplicated Headcount**

		Ethnic Groups																Total	
		Asian		African American		Hispanic		American Indian/Alaskan Native		Other		Pacific Islander		White		Unknown			
		Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %		
2002	Spring	3	8.8%	0	.0%	9	26.5%	0	.0%	1	2.9%	0	.0%	20	58.8%	1	2.9%	34	100.0%
	Fall	10	14.1%	1	1.4%	13	18.3%	0	.0%	2	2.8%	1	1.4%	37	52.1%	7	9.9%	71	100.0%
2003	Spring	8	16.3%	0	.0%	3	6.1%	0	.0%	1	2.0%	0	.0%	32	65.3%	5	10.2%	49	100.0%
	Summer	1	7.1%	0	.0%	3	21.4%	0	.0%	0	.0%	0	.0%	10	71.4%	0	.0%	14	100.0%
	Fall	3	5.5%	0	.0%	12	21.8%	0	.0%	1	1.8%	0	.0%	35	63.6%	4	7.3%	55	100.0%
2004	Spring	4	8.5%	0	.0%	11	23.4%	1	2.1%	0	.0%	0	.0%	29	61.7%	2	4.3%	47	100.0%
	Summer	1	5.0%	0	.0%	3	15.0%	0	.0%	0	.0%	0	.0%	16	80.0%	0	.0%	20	100.0%
	Fall	7	10.6%	1	1.5%	8	12.1%	0	.0%	1	1.5%	0	.0%	40	60.6%	9	13.6%	66	100.0%
2005	Spring	8	11.3%	1	1.4%	8	11.3%	0	.0%	0	.0%	0	.0%	45	63.4%	9	12.7%	71	100.0%
	Summer	1	4.2%	0	.0%	3	12.5%	0	.0%	0	.0%	0	.0%	13	54.2%	7	29.2%	24	100.0%
	Fall	3	6.8%	1	2.3%	7	15.9%	0	.0%	0	.0%	0	.0%	30	68.2%	3	6.8%	44	100.0%
2006	Spring	9	18.8%	0	.0%	6	12.5%	0	.0%	0	.0%	0	.0%	28	58.3%	5	10.4%	48	100.0%
	Summer	4	33.3%	0	.0%	1	8.3%	0	.0%	0	.0%	0	.0%	3	25.0%	4	33.3%	12	100.0%
	Fall	4	6.3%	0	.0%	14	22.2%	0	.0%	0	.0%	0	.0%	36	57.1%	9	14.3%	63	100.0%
2007	Spring	2	3.1%	0	.0%	19	29.7%	0	.0%	0	.0%	0	.0%	35	54.7%	8	12.5%	64	100.0%

Educational Goals by Year/Term

Computer Maintenance Technology Educational Goals by Year/Term Duplicated Headcount

	2002				2003				2004				2005				2006				2007	
	Spring		Fall		Spring		Fall		Spring		Fall		Spring		Fall		Spring		Fall			
	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %		
AA/AS and transfer	6	17.6%	6	8.5%	3	6.1%	13	23.6%	9	19.1%	7	10.6%	9	12.7%	4	9.1%	9	18.8%	12	19.0%	15	23.4%
Transfer w/o AA/AS	0	.0%	1	1.4%	3	6.1%	0	.0%	0	.0%	1	1.5%	1	1.4%	2	4.5%	2	4.2%	0	.0%	0	.0%
AA/AS w/o transfer	1	2.9%	2	2.8%	2	4.1%	0	.0%	1	2.1%	1	1.5%	3	4.2%	1	2.3%	2	4.2%	2	3.2%	2	3.1%
2-yr Voc. w/o transfer	3	8.8%	3	4.2%	2	4.1%	1	1.8%	1	2.1%	4	6.1%	3	4.2%	1	2.3%	0	.0%	4	6.3%	2	3.1%
Voc. certif. w/o transf	8	23.5%	4	5.6%	7	14.3%	3	5.5%	5	10.6%	8	12.1%	8	11.3%	6	13.6%	2	4.2%	7	11.1%	6	9.4%
Discover interests	4	11.8%	5	7.0%	3	6.1%	5	9.1%	5	10.6%	2	3.0%	6	8.5%	3	6.8%	3	6.3%	2	3.2%	3	4.7%
Acquire job skills	6	17.6%	18	25.4%	16	32.7%	8	14.5%	9	19.1%	12	18.2%	17	23.9%	9	20.5%	9	18.8%	12	19.0%	11	17.2%
Update job skills	3	8.8%	6	8.5%	3	6.1%	2	3.6%	3	6.4%	9	13.6%	5	7.0%	4	9.1%	2	4.2%	5	7.9%	5	7.8%
Ed. development	2	5.9%	11	15.5%	7	14.3%	8	14.5%	6	12.8%	11	16.7%	10	14.1%	6	13.6%	4	8.3%	5	7.9%	2	3.1%
Basic Skills	0	.0%	1	1.4%	1	2.0%	1	1.8%	2	4.3%	1	1.5%	2	2.8%	3	6.8%	2	4.2%	0	.0%	1	1.6%
HS or GED	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	1	1.6%	1	1.6%
Undecided	1	2.9%	14	19.7%	2	4.1%	14	25.5%	6	12.8%	10	15.2%	6	8.5%	5	11.4%	13	27.1%	13	20.6%	16	25.0%
Unknown	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	1	1.4%	0	.0%	0	.0%	0	.0%	0	.0%
Total	34	100.0%	71	100.0%	49	100.0%	55	100.0%	47	100.0%	66	100.0%	71	100.0%	44	100.0%	48	100.0%	63	100.0%	64	100.0%

Awarded Degrees and Certificates for Computer Maintenance Technology

Table 1 Awarded degrees for CMT by award year

COMPUTER MAINTENANCE TECHNOLOGY	awardYear	Degree Type	
		AA	AS
		Count	Count
	20042005	0	3
	20052006	0	1
	20062007	1	0

Table 2 Awarded certificates for CMT by award year

COMPUTER MAINTENANCE TECHNOLOGY	awardYear	Certificate
		Count
		20042005	2
20052006	3	
20062007	2	
20072008	1	

