

**El Camino College  
Industry and Technology Division**

**Instructional Program Review**

**Electronics Computer Hardware Technology**

**Fall 2007**

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## I. Overview

### A. Description of Program

The electronics and computer hardware technology program prepares students for employment in the areas of computer hardware, military and industrial, military and consumer electronics. Students acquire proficiency in analyzing, assembling, testing, and troubleshooting both analog circuits and computer systems. Students are trained in industry standard codes and symbols for components, systems, safety devices, and procedures. The program also meets the needs of the currently employed who seek to upgrade skills, change careers, or prepare for industry certification and licensing. Competencies will be assessed regularly by student performance in the classroom and laboratory.

### B. Status of Previous Recommendations

1. The College's Director of Safety and Health should help the department identify and inventory safety problems in all Electronic labs so these problems can be resolved as soon as possible.

**Status: The recommendations have been carried out in part**

2. The department should consider establishing apprenticeships and internships. An apprenticeship program to help those students with little or no experience, would make ECC's electronic program much more competitive with sister campuses who offer such services

**Status: The recommendations have been carried out in part**

- 1) Allied Signal Internship
- 2) Electronic courses used to fulfill part of the Mfg. Tech Apprenticeship
- 3) Interns developed through the Specialty Beverage Association and ECC, "BEST" Program
- 4) Electronic courses used to fulfill part of the Hohn Furniture Apprenticeship
- 5) Internships with Southern California Edison

3. Department faculty, in cooperation with the division dean, should take steps to ensure that the "long-term" needs of the program are reflected in the College's five-year educational, technology, and capital-construction master plans.

**Status: The recommendations have been carried out in part**

4. The department has a substantial need for updated instructional equipment and software. Faculty should continue to address the near-term requirements of the program through the “Academic Technology Committee and other sources of funding. These sources of money include VTEA, proceeds from Contract Ed, and from various types of Grants

**Status: The recommendations has been largely carried out**

5. The new El Camino grants officer should meet with department faculty to discuss sources of funding for conferences, workshops, and staff development

**Status: The recommendations has not been carried out**

6. The Validation Committee identified a number of activities extending beyond the classroom that contribute to the success of the program and that the faculty lack the time to undertake. These include: recruiting visits to local high schools, develop programs to promote and do “follow-up” research on graduates of the program. Faculty should continue to work with the division dean to find ways in which the need for these activities can be met.

**Status: The recommendations have been carried out in part**

Faculty have been very active in: Afternoon College, Department Open Houses, Career an Major’s Fairs, Inglewood and ECC Robotic Academies, and have been a resource for “five” local high schools through Project Lead the Way

7. Faculty should work with the appropriate El Camino office, or offices, to improve advance planning for conference attendance, reimbursement, and provide advance of conference an workshop expenses where this is feasible

**Status: The recommendations have been carried out in part**

Many times, faculty have provided, said offices advance requests for travel either a workshop or conference. It is the college that sometimes procrastinates on reservations and reimbursements. Faculty and staff from the electronics department make every effort possible to make our requests in a timely fashion.

8. The department should consider offering a variety of specialized courses that meet the current needs of its students and local industries.

**Status: The recommendations have been carried out in part**

Specialized Power Line Technology Courses  
PLTW Specialized Digital Electronics  
Industrial Robotics  
High School Robotic Academies

## II. Program Statistics

### A. Demand: FTES by Course/Program

Instructions: Analyze the **FTES by Course/Program** using 1<sup>st</sup> census data and answer the following questions. At a minimum, your analysis must include a 3-year cycle comparing like semesters.

Course	Year 1 (Fall 04 & Spring 05 )			Year 2 (Fall 05 & Spring 06 )			Year 3 (Fall 06 & Spring 07 )		
			<b>Totals</b>			<b>Totals</b>			<b>Totals</b>
ECHT11	4.5	6	<b>10.5</b>	9.48	7.8	<b>17.28</b>	9.6	9.6	<b>19.2</b>
ECHT 20	1.71	0	<b>1.7</b>	3.5	3.6	<b>7.1</b>	0	1.5	<b>1.5</b>
ECHT 22	3.09	1.5	<b>4.6</b>	2	2.1	<b>4.1</b>	1.68	1.59	<b>3.27</b>
ECHT 110	3.09	2.8	<b>5.9</b>	0	1.59	<b>1.59</b>	0	1.71	<b>1.71</b>
ECHT 112	1.7	0.69	<b>2.4</b>	0	5.1	<b>5.1</b>	0	0.3	<b>0.3</b>
ECHT120	2.19	1.41	<b>3.6</b>	1.41	.9	<b>1.50</b>	1.26	0.6	<b>1.32</b>
ECHT 122	0	1.29	<b>1.29</b>	0	.51	<b>0.51</b>	0.5	0.99	<b>1.49</b>
ECHT 124	0	0	<b>0</b>	1.89	0	<b>1.89</b>	0	0.99	<b>0.99</b>
ECHT 130	2	3.09	<b>5</b>	2.8	1.71	<b>3.51</b>	2.8	1.89	<b>4.69</b>
ECHT 131	1	1.29	<b>2.3</b>	.8	0	<b>.8</b>	0.5	0.5	<b>1</b>
ECHT 140	5.2	2.8	<b>7</b>	5	2.8	<b>7.8</b>	3.44	3.39	<b>7.43</b>
ECHT 142	2.6	1.9	<b>4.5</b>	1.48	2.5	<b>3.98</b>	1.72	1.72	<b>3.44</b>
ECHT 144	3.5	2.2	<b>5.7</b>	2.8	0	<b>2.8</b>	1.72	1.72	<b>3.44</b>
ECHT 150	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>
ECHT 152	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>
ECHT 190	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>
ECHT 191	0	1	<b>1</b>	0	0	<b>0</b>	.099	.099	<b>1.98</b>
ECHT 192	1	0	<b>1</b>	0	0	<b>0</b>	0	0	<b>0</b>
ECHT 193	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>
ECHT 194	0	0	<b>0</b>	0	0	<b>0</b>	0	0	<b>0</b>
ECHT 95A	0	0	<b>0</b>	.8	0	<b>.8</b>	0.099	0	<b>0.099</b>
ECHT 99	1	.5	<b>1.5</b>	0.09	0.09	<b>0.18</b>	0	0	<b>0</b>
<b>FTES Totals</b>	<b>29.6</b>	<b>25.47</b>	<b>55.07</b>	<b>32.05</b>	<b>27.29</b>	<b>59.34</b>	<b>23.42</b>	<b>26.6</b>	<b>50.02</b>

1. Given the data, can you recognize any trends in course demand in any of the Program's courses?

At the time of this review, the program is not in a growth mode. However, this is not unusual in that the program's fill rates tend to fluctuate with trends in the electronics/aerospace industries. When economic times are good for the industry and jobs are plentiful, students tend to leave the program in order to pursue work within the industry. This results in the lowering of fill rates until the availability of work within the industry declines, at which time fill rates tend to increase again.

1. All sections of ECHT 11 and 140 are well enrolled. Some students are possibly using this class as either an exploratory course or to fulfill requirements for other college disciplines.

2. There seems to be a drop-off in interest in most of the communication courses ECHT 150 and 152 haven't been offered in the past three years.

D. What are you doing to respond to trends?

The department recognizes that it's existence depends on enrollment. Faculty is currently reviewing of curriculum to determine relevance. It has been suggested, that in the area of communications, that we consider developing and teaching courses that detail telecommunications and Home Technology Integration. Faculty have been involved in a partnership with Southern California Edison. There are two new courses and a new "skill certificate" that is directly connected to this partnership.

ECHT Faculty are involved in teaching courses which serve many of our community high schools. Our "Robotic Academy" and "Project Lead the Way" programs develops FTES that is shared by both ECC and the sponsoring high school. In many cases, the ECHT Department is not credited for the FTES. The FTES goes to Afternoon College

Two electronics faculty have also participated in intensive in-service training to bring both more women and other under represented populations into our program

3. Should a recommendation be written addressing the data?  Yes  No  
(If yes, list.)

- a) Continue creating public awareness of the opportunities offered in the Electronic and Computer Hardware Technology program.
- b) Continue student recruitment efforts.
- c) Review Degree and Certificate requirements.

**B. Offerings: Fill Rate\***

**Total Annual Program Participation (3-year Trend)**

**Years: 2004/05—2006/07**

**Program: Electronics & Computer Hardware Technology**

	2004-05	2005-06	2006-07	3-year Avg
Annual Seat Count	583	480	457	507

Instructions: Review and analyze the **fill rate data** (including the fill rate per course for both day and evening), provided by Institutional Research for this program for a three year cycle and answer the following questions:

Average fill rate of courses in program: How does this program compare to:

**Course Fill Rates**  
**Daytime vs. Evening Classes**

	Fall 04	Fall 05	Fall 06
Daytime	54.9%	68.1%	99.6%
Evening	54.4%	75.8%	75.1%

1. Given the data, is the program in a growth mode?      Yes      No  
**Comment.**

2. What adjustments are indicated?  
**Explain.**

A number of our evening Electronic and Computer Hardware Technology students have expressed their concerns regarding the starting times for our advanced courses, which currently start at 6:00PM either MW or TTH. The consensus is that both student retention and success rates might improve if this class were changed either to Lectures on Monday's and open Labs on Wednesday. The same would follow for the TTh format. The start times would change from 6:00Pm to 6:30 PM.

Since the Daytime classes are filling at a greater percentage that the evening, we should offer more of the elective courses that have been traditionally only offered in the evening.

3. Should a recommendation be written that addresses the data?      Yes      No  
**(If yes, list.)**

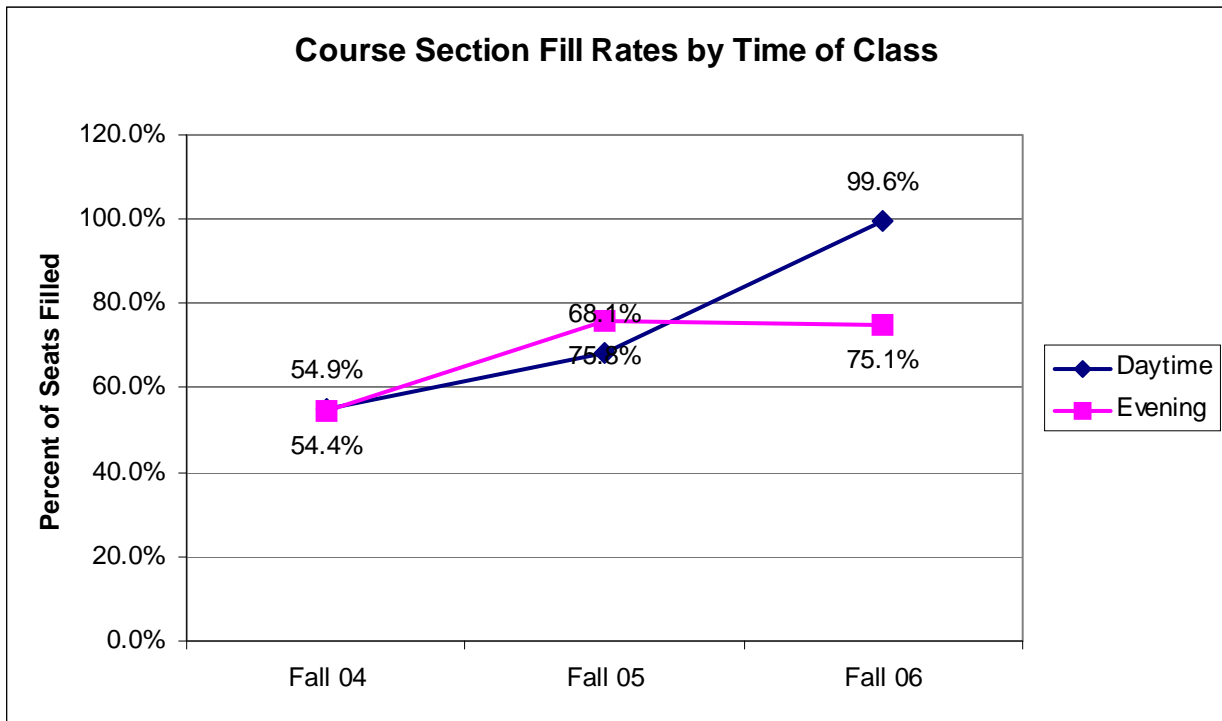
\* Percent of fill of each classes at census.

### C. Scheduling: Student Satisfaction with Scheduling

Instructions: Complete the chart below. Indicate the time when sections of courses in the program are currently scheduled to start. Analyze the data provided by Institutional Research on student satisfaction with scheduling in the program and answer the questions.

Course	During the early morning before 10 am	During the late am/early pm 10am –1:55 pm	During the late afternoon 2 pm -4:25 pm	During the evening 4:30 & later	During the weekend	During the summer	Via Telecourse	Via Online
ECHT11	9:30am-12:45 pm			6 -9 pm		6-10:15pm		
ECHT 20	8:30am – 9:30 am			5 – 6 pm				
ECHT 22	1:15 – 4:30 pm			6 - 9:15 pm				
ECHT 110	9:30am – 12:45pm			6 - 9:15 pm				
ECHT 112	9:30am – 12:45pm			6 - 9:15 pm				
ECHT120	9:30am – 12:45pm			6 - 9:15 pm				
ECHT 122	9:30am – 12:45pm			6 - 9:15 pm				
ECHT 124	9:30am – 12:45pm			6 - 9:15 pm				
ECHT 130	9:30 – 12:45pm			6 - 9:15 pm				
ECHT 131	8:00am – 11:25pm			7 - 10:15 pm				
ECHT 140	8:00am – 11:25pm			6:00 -9:55 pm				
ECHT 142			2:15 - 5:55 pm	6:00 -9:55 pm				
ECHT 144			2:15 - 5:55 pm	6:00 -9:55 pm				
ECHT 150								
ECHT 152								
ECHT 190								

ECHT 191				6 – 9:30 pm				
ECHT 192								
ECHT 193								
ECHT 194								
ECHT 99	Arranged	Arranged	Arranged	Arranged				



1. What (if anything) is indicated by the student satisfaction with scheduling?

Because of the 16 week format, students seem to be attracted to both morning and evening courses. This confirms to the department that a major sector of our student population is either pursuing sections that fit into their work schedules.

2. Are there time periods of high student demand which are not being addressed?  Yes  No  
How could such demand be addressed?

Although student demand indicates interest in class offerings at all times, there have been limitations on the ECHT's department's ability to expand classes to meet these demands. Greater ability to schedule evening and weekend classes would result in increased FTES during times at which the campus is not currently being utilized. It would also have the added benefit of allowing access to a larger population that is not currently able to enroll at El Camino College due to the limited scheduling of courses.

3. Should a recommendation be written addressing this area?  Yes  No  
(If yes, list.)

The department should investigate offering at least one core courses in either a all day Saturday, or Saturday/Sunday format . We are currently offering at least one, Saturday, robotic course each semester

## D. Retention and Success

### 1. Retention

Instructions: Review and analyze the data on **retention (course completion with a grade other than W)** over a three-year cycle comparing day to evening classes, term to term (e.g. fall to spring, spring to summer, etc.), and course levels.

1. Given the data, what trends are observed?

**Comment.**

It has been realized, that retention in the lower courses are higher than the advanced.

In general, the overall retention rates for both day and evening classes remained fairly consistent and well above the campus average. Retention for core classes is below the program average, while those of the specialized advanced classes, constantly remains above the program average.

This trend is not surprising. Many new students, those most likely to be taking Electronics and Computer Hardware Technology core course, are as yet uncommitted to a course of study.

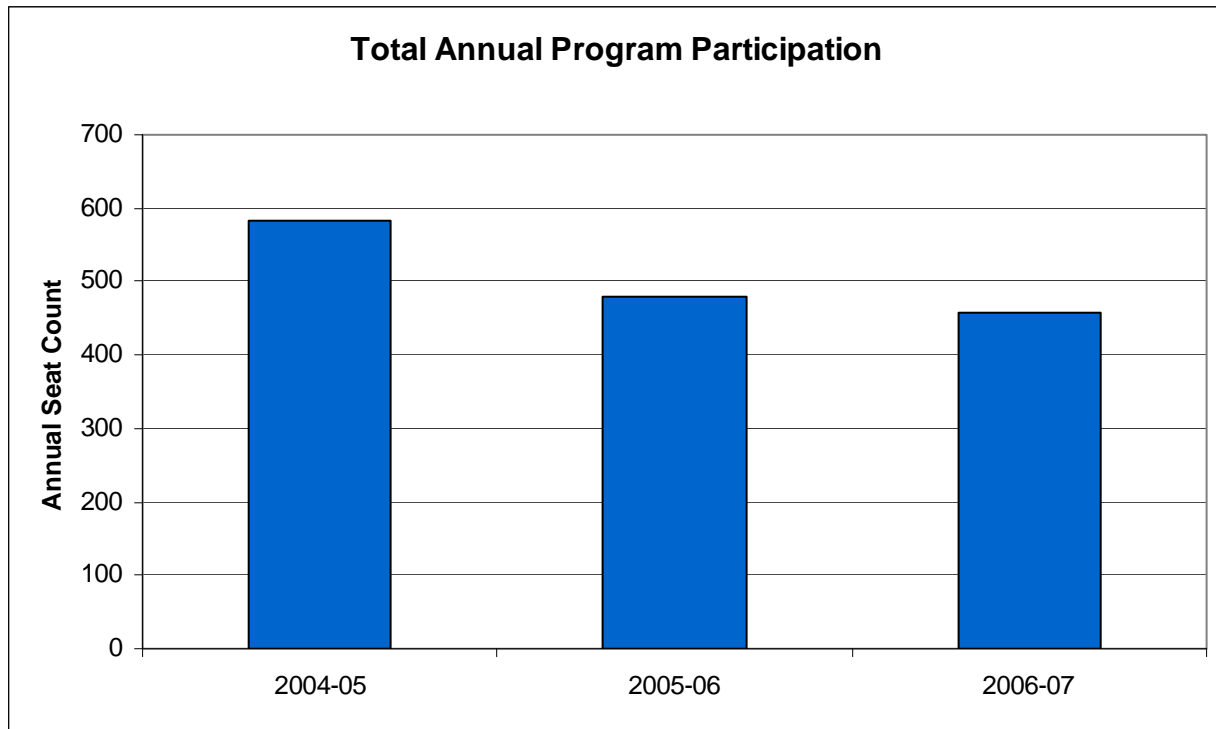
Therefore, it is not unexpected that this group of students shows a higher rate of attrition.

Also, many of our students become highly employable by taking one or two of our classes. Our department also enjoys a higher than average award rate in both certificates and degrees.

**Electronics an Electric Technology****Top Code: 093400**

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<b>Year</b>	<b>Award Type:</b>	<b>Program Type:</b>	<b>Program Code</b>	<b>Award Count</b>
2006-07	Associate of Science	Computer Electronics	093410	7
2005-06	Cert requiring 18 to fewer than 30 units	Computer Electronics	093410	2
2006-07	Cert requiring 18 to fewer than 30 units	Electronics & Electric Technology	093400	6
2006-07	Cert requiring 18 to fewer than 30 units	Industrial Electronics	093420	1
2006-07	Cert requiring 30 to fewer than 60 units	Industrial Electronics	093420	1
2005-06	Associate of Science	Electronics and Electric Technology	093400	4
2005-06	Cert requiring 18 to fewer than 30 units	Electronics and Electric Technology	093400	3
2005-06	Cert requiring 30 to fewer than 60 units	Electronics and Electric Technology	093400	2
2005-06	Associate of Science	Computer Electronics	093410	7
2005-06	Cert requiring 18 to fewer than 30 units	Computer Electronics	093410	5
2005-06	Cert requiring 30 to fewer than 60 units	Computer Electronics	093410	2
2004-05	Associate of Science	Computer Electronics	093410	7
2004-05	Cert requiring 18 to fewer than 30 units	Computer Electronics	093410	4
2004-05	Associate of Science	Electronics & Electric Technology	093400	3
2004-05	Cert requiring 18 to fewer than 30 units	Electronics & Electric Technology	093400	2
2004-05	Cert requiring 30 to fewer than 60 units	Electronics & Electric Technology	093400	1



2. Should a recommendation be written addressing the data?  Yes  No  
 (If yes, list.)

The faculty from the Electronics and Computer Hardware Technology Program should engage in “cross-discipline” and “inter –division “programs. We offer course that could complement other programs such as: Physics, Engineering Technology, and Business. By developing such a linkage, we could prepare our students for greater academic opportunities.

## 2. Success Rate

Instructions: Review and analyze the data on **success rate (students who earned a grade of A,B,C, or Credit)** over a three-year cycle comparing day to evening classes, term to term (e.g. fall to spring, spring to summer, etc.), and course levels and answer the following questions:

1. What trends are observed?

Semester	Students	Success Rate	Retention Rate
F 2004	249	91.5%	79.9%
S 2005	311	84.5%	76.8%
F 2005	254	69.4 %	70.1 %
S 2006	210	53.33%	63.8 %
F 2006	220	85.0 %	72.7%
S 2007	211	67.3 %	77.7 %

2. Should a recommendation be written addressing the data?  Yes  No  
(If yes, list.)

### III. Curriculum

#### A. Course and Content

##### 1. Courses Not Offered

Instructions: Indicate the total number of courses in the program and list all courses in the program which are in the catalog but have not been offered in the last three years. Refer to this list to answer the following questions:

1. Given the data, are there courses that should be inactivated?  Yes  No  
**Comment.**

Courses that have not been offered in the past six semesters should be inactivated. This will help both our students and counselors make appropriate changes to their academic plan.

2. If there are courses not offered in the last three years that you do not wish to inactivate, what reasons are there to keep them active?

From surveys, and from our Advisory Committee, there's still a need for technical communications courses. Organizations such as Raytheon, Northrup Grumman, ATT Wireless, and the MTA indicate such a need for trained communication technicians..

3. Should a recommendation be written addressing the data?      Yes      No  
(If yes, list.)

These courses should be revised to reflect on changes in technology. ECHT 150, Electronic Communication I, for example should cover not only Wireless, but also, wired, Fiber Optic and Telecommunications. ECHT 152, Electronic Communications II,

## 2. Course Revisions and Additions

Instructions: Utilize the Course Review Chart from the Curriculum Office to answer the following:

1. Are there course outlines that should be revised?      Yes      No  
(If yes, list.)

ECHT 150 , Electronics Communications I  
ECHT 152, Electronics Communications II  
ECHT 193, Prep for FCC GROL Licensing  
ECHT 190, Analog and Digital Analysis and Troubleshooting

2. Are there courses inconsistent with current practice in the field?      Yes      No  
**Explain.**

3. Should new courses to be added to the program?      Yes      No  
**Explain.**

Home Technology Integration Technicians  
Electronic Security and Surveillance  
Alternative and Renewable Energy Systems  
Telecommunications  
Mechatronics

4. Are adjustments necessary to the conditions of enrollment (Prerequisite, Corequisite, Recommended Preparation, and Enrollment Limitations) for a specific course to increase student success?  
 Yes      No      Uncertain  
**Comment.**

Unless there's a real need for a "hard-perquisite", we should use "recommended preparation" for most of our core courses.

5. If the program offers a degree and/or certificate, list them and indicate when the requirements were last reviewed? (If not applicable, skip to Question 7.) (2005)

**Associate in Science:** Computer Technology, Electronics Technology

**Certificated of Completion/Competence:** Communication Equipment Technician, Electronic and Computer Hardware Technician, Electronic Engineering Technology Technician,

6. Are these degree and/or certificate requirements inconsistent with current practice?  Yes  No  
**Explain.**

7. Is there a need to create or delete a degree and/or certificate?  Yes  No  
**Explain.**

8. Should any recommendations be written that address the above responses?  Yes  No  
**(If yes, list.)**

## B. Articulation

Instructions: Articulation is the process by which courses taken at ECC can be used to satisfy subject matter requirements at another college or university. This is important in the transfer process for students. To help you in this area, you can review articulation agreements at [www.assist.org](http://www.assist.org), the California Articulation Number Guide or meet with the Articulation Officer, Lori Suekawa (ext. 3517).

1. Are there any courses in your curriculum which are part of a lower division preparation for the major that are not articulated with our major transfer institutions? Yes

2. What problems, if any, are there in articulating courses?

Keeping all of our agreements current. In the past, this college went through a number of Articulation Officers. It became very difficult determining which agreements were still valid.

3. Should a recommendation be written addressing above responses?  Yes  No  
(If yes, list.)

- 1) Have the college Articulation Officer visit the various divisions/departments at least twice a academic year
- 2) Each department should be given a list of agreements currently in force and those in need of revision

## C. Instruction and Assessment

### 1. Learning Methods

1. What learning methods are incorporated inside and outside the classroom in the program to promote student success? **Explain.**

The electronics department faculty make themselves available either in person, internet, or by phone to support our students. The "TOP-LAB" tutor, Jerry, has proven to be an asset that has to help in our course retention.

2. Should a recommendation be written addressing above response?  Yes  No  
(If yes, list.)

- 1) The department would like to have institution make a commitment in first recognizing the TOP Lab's value in assisting us in the area of student success

## 2. Assessment

1. How do you evaluate the extent to which the learning objectives, skills, and competencies are being met?

Courses : Each course is structured in such a way that entrance, as well as exit skills are intrinsically measured. The first couple of weeks are designated to assess the baseline abilities of a particular class. As we all know, each class is different. Saying that, we use different teaching techniques to tailor the learning experience to our audience. The most important objective we integrate into each course, is that, student can take to skills learned and apply them to a job. We use the phrase, "Each course is another tool in your toolbox".

Program: Through university programs that transfer our students. We also get feedback from our Advisory Committee, mainly composed of small, medium, and very large Electronics, Utility, and Aerospace corporations in the area who employ our students.

2. How do you use the results of the above evaluation to improve student learning and the quality of the program?

The feedback from our students and advisory committee help us refine our program. We look at both of these groups as "customers". A customer will not buy your product unless there's some "value" attached to it. Unless we turn out a competent technician/engineering tech, are program will cease to exist. To that end, electronics faculty draw upon the both the vast knowledge and industrial experience base each of them possess. Many faculty participate in industrial workshops to bring back that cutting edge technology to their classrooms

3. Should a recommendation be written addressing this area? \_\_\_\_\_ Yes \_\_\_\_\_x\_\_\_\_\_ No  
(If yes, list.)

## IV. Program Requirements A. Instructional Support

1. Identify key instructional support areas used by the program.

### Libraries & Programs:

	Library	X	Special Resource Center	X	Basic Skills Study Center		Library Orientation
	Music Library		Puente Program		Honors Transfer Program		Other (Please list.)
	Learning Resource Center Media Materials Collection		Assessment/Testing Office		Counseling	X	
	EOP&S/CalWORKS		Transfer Center		First Year Experience	X	
	Learning Communities		Project Success		Honors Transfer Program		

### Computer Labs & Tutoring:

	LMTC Computer Commons		SRC High Technology Center		Other Computer Lab: Please list.		Writing Center
	CAI MAC Lab		Writing Lab			X	LRC Tutorial Program
	CAI Windows Lab		Math & Science Lab				Math Tutoring
	TOP Lab	X	Keyboarding Center				SRC Tutorial Program
	Hawthorne BTC						EOP&S Tutoring
	Inglewood Center						

### Faculty Support Services:

	Graphic Arts		Copy Center		Distance Education		Other (Please list.)
	Media Services AV Production		Tech Services Help Desk	X	Teleconferences		
	Media Services AV Equipment Distribution	X	Support Staff	X	Webconferences		
X	ECC Vehicles		ECC hosted Websites	X	Staff Development		
X	ECC E-mail						

2. Do you have some instructional support needs that are not being met?  Yes  No  
**Comment.**

We are asked to use the Copy Center to reproduce test, quizzes, and notes. Because of the sure college volume, sometimes we have to scramble around to get sets made for our classes. Many faculty have gone to places such as Kinkos for some of our copying needs.

3. Should a recommendation be written to address your needs?  Yes  No  
 (If yes, list.)

### B. Facilities and Equipment

1. Does the program make effective use of its facilities and equipment? **Explain.**

Yes. Over the past four years, the department has lost two full lecture/lab rooms. Today, we are housed in two specialized and two general lecture lab rooms. The general lab/lecture rooms are jointly being used by other disciplines such as Fire Science, Nutrition, and Technical Math.

2. Are adequate facilities, equipment and supplies available for the program?  Yes  No  
**Explain.**

3. Are the facilities and equipment adequately maintained?  Yes  No  
**Explain.**

Lighting in some of the rooms are poor because of burnt out lights not being replaced. Chalkboards are rarely cleaned. When equipment is sent in for repair, there's too much lag time until the equipment is returned to service

4. Should a recommendation be written addressing the data?  Yes  No  
(If yes, list.)

### C. Staffing

Instructions: Analyze the data on **FTEF, adjunct FTEF, and the FT/PT ratio** for the most recent fall semester and answer the following questions:

**FTEF (full-time equivalent faculty):** # 4.5

**Number of full-time FTEF:** # 3

**Number of adjunct FTEF:** # 3

**FT/PT load ratio:** 1:1

1. How do the program numbers compare to a like semester (Fall to Fall) three years ago or the previous program review?

The fall semester tends to be our largest. Fall 2003 we had 309 students compared to this past Fall, 06, where we had 220. Also a note, during that same period, we lost three full-time instructors to retirement and death. By comparing these values, the program has shown some growth. Also, ECHT faculty have been assigned to teach courses outside of the current program (MTT70, 75, and ET14), which helps support the MTT program rather than the ECHT program.

2. What do the program data indicate? Comment on any trends or unusual data.

By comparing these values, the program has shown some growth

3. How does the FT/PT ratio benefit or harm the program?

By using the current status, both the college and department has added staffing flexibility.

4. Do you have a faculty mentoring program?  Yes  No  
**Describe.**

5. How do faculty maintain currency in their field?

Many faculty participate in industrial workshops to bring back that cutting edge technology to their classrooms

6. Fill in the faculty status data below and answer the questions that follow.

Name	Reassigned time (how much in %)	Currently on leave (check)	Retired in last 2 years (check)	FT hired last 3 years (check)	Anticipated to retire in next 3 years (check)
Steve Cocca					
Doug Marston					x
John Ruggirello					
Richard Alvidriz			x		
Jim Alward			Deceased		
Richard Davis			x		

6a. How does this data impact the program?

The loss of the three full-time faculty helped reduce the “load” issues faced by the department. By using the current status, both the college and department has added staffing flexibility.

6b. Will this data affect the program in the future?

As ECHT faculty gets older, the department needs to mentor the younger, adjunct faculty in the mechanics of curriculum development. Also, some faculty participate in ancillary college programs such as: Economic Development, Community Advancement, and statewide committees. The college needs to make provisions to backfill these responsibilities.

7. From this information, can you identify present and future staffing needs? \_\_\_\_ Yes \_\_x\_\_ No  
**Explain.**

8. What is the department doing to address any future staffing needs?

Developing a pool of highly qualified part-time faculty

9. Should a recommendation be written addressing the data? \_\_\_\_\_ Yes      \_\_\_x\_\_\_ No  
(If yes, list.)

### D. Planning

1. Do the program faculty and other personnel have a clear idea of what is happening in the program, where it is headed, what external changes are affecting it, and what changes need to be made in order to enable the program to adapt and continue to be successful? **Explain.**

Unless we turn out a competent technician/engineering tech, are program will cease to exist.

2. What data, not currently provided, would be needed in order to improve planning for the development of the program? **Explain.**

Area Labor Market Indicators for Electronics and allied fields

3. What major external changes or trends do you expect to be of particular relevance to your discipline in the next five years?

- 1) Security/Homeland Security ( Surveillance and Net Forensics )
- 2) Entertainment ( Home Integrated Technologies)
- 3) Renewable Energy (Co-Gen, Wind, Solar, and Fuel Cell)
- 4) Telecommunications

4. What will the implications of these changes or trends for your program and how will the program need to respond?

- 1) Faculty will have to be very flexible. We need to partner-up with these emerging technologies
- 2) We need to develop and get curriculum approved in a timely manner.

5. Based upon the information above, how would you like the program to evolve within the next five years?

See item #3 of this section

6. Should a recommendation be written addressing the data? \_\_\_\_\_ Yes      \_\_\_x\_\_\_ No  
(If yes, list.)

## V. Conclusion

### 1. Prioritized Recommendations

A. The prioritized recommendations for the program are:

1. Improved marketing of the program
2. Strengthen relationships with local feeder schools
3. Strengthen relationships with local industry
4. Update facilities to include Telecommunications lab, Power and Energy lab, and Home Technology Integration lab.

### 2. Major Needs

1. Dedicated ECC administrator to develop internships and industry relationships exclusively for the I&T Division
2. Infusion startup of monies to implement new state-of –the-art technologies
3. A formal partnership with local industry similar to articulation agreements
4. Department Chair or “Cluster Leader”
5. A less burdening curriculum process.

### 3. Strategies

Intercampus efforts

Merge Electronics and Computer Hardware Technology with other division  
Departments to share resources and strengthen offerings

Explore and possibly develop new degrees and certificates in the areas of : Mechatronics,  
Renewable Energy, Telecommunications, Security, and Home Technology Integration

Develop long-term internship programs

Further develop website presence to advertise program and open communication

“List-serve’ newsletter of class offerings and current work to both development centers ,  
potential employers and students

Upgrade curriculum