

Why Conduct a Program Review?

Program review is a process that asks members of a department to critically assess their programs identify necessary adjustments and design a mechanism to institute and evaluate proposed changes. It is not a “necessary evil” but a process that will help faculty clarify and achieve program goals. This is no different than how we tell our students to utilize the results of the various forms of assessment we use in class to see where their strengths and weaknesses are and where they need to take some time to strengthen their weakest areas.

To ensure that program review achieves its goals, it should be designed to ensure that there are appropriate linkages with educational planning including curriculum, budgetary processes, and accreditation. An area’s program review should feed into the college’s planning and budgeting processes in order to:

- evaluate how well a program functions in relation to its objectives, the mission of the college, the college’s institutional goals and priorities, and the needs of the community.
- strengthen planning, decision-making, and scheduling.
- encourage program development and improvement.
- improve the use of college resources.
- comply with Title 5, accreditation, and other mandated reviews.

Program Review Process and Timeline

It is expected that the normal timeframe for the review process will be one academic year and will be on a six-year cycle. The process consists of the following steps:

Initial planning – A workshop will be held for representatives of the programs scheduled for review during the preceding spring semester and should include as many of the members of the units as possible. The meeting will cover an orientation to the process, dissemination of basic research data, discussion of the timelines and expectations, and provide answers to any questions representatives have. Each program under review will select two representatives, where feasible, to oversee the review process.

Program Review – During the fall semester, department members will design and conduct, with the assistance of Institutional Research, surveys for additional information needed to complete their report. A draft of the report should be ready in early December for review and comment by the department members to identify areas that need further attention. The report will be submitted to Academic Affairs at the end of March.

Acceptance – In April, the chairs of the review committees will present their reports to a committee comprised of representatives of the Academic Senate and Academic Affairs. This committee will grant either full or conditional approval of the program review. Conditional approval will require the area to make the necessary revisions to the report to gain full approval.

Dissemination – Approved program reviews will be available in the library and posted on the web if possible. Additional reports will be provided to Cabinet and the Board of Trustees.

Notes for Using Program Review Format

Throughout the design of the process, the Program Review Task Force kept the following questions in mind:

- Where are we now?
- Where do we want to be?
- What do we need to do to get there?
- What evidence do we need to track our progress?

Overview –

Program Description: Provide a brief description of the program including the objectives. Comment on how the activities of your program support the mission and institutional goals of the College.

Status of Previous Recommendations: This represents a history since the last review. Examine previous recommendations and area's responses. What are the relevant institutional issues that impacted the program?

Program Statistics –

This area focuses on basic trends in the areas of *demand, offerings, scheduling, retention and success*, and the impact of these on the program. Normally a three-year cycle is used, but it is recognized that in some disciplines, the cycle may be longer due to fluctuations in the market. Also some areas like Fine Arts and Industry and Technology may want to group types of similar courses like studio art rather than list them individually.

Curriculum –

Course and Content – Examines the current status of the curriculum of a program. Is it in line with current practice in the field? Are there courses that are obsolete? Missing? What is the status of conditions of enrollment?

Articulation – Examines current status of courses with regards to articulation and identifies any problem areas.

Instruction and Assessment – Examines two areas, learning methods and assessment. The focus on learning methods assists in identifying the types of student-centered learning that are occurring on campus. Examples of learning methods include collaborative learning, classroom-based research, student-conducted research, Socratic method, supplemental instruction, and learning communities. Examples of assessment include evaluation of whether the learning objectives, skills, and competencies are being met and how the information gathered in this evaluation is used to improve student learning and the overall quality of the program. This is an appropriate area in which to discuss how learning objectives of the program are reviewed and kept current.

Program Requirements –

This area is a combination of looking at resources such as staffing and facilities and planning.

Instructional support – What other areas impact your program? Student success? What are your needs in this area?

Facilities and Equipment – Comment on facilities the program uses, their adequacy, your immediate needs and long-range needs. What is currency of equipment and technology in the program? How does this impact the program?

Staffing – Examine current staffing. Describe the strengths and weaknesses of staff as appropriate to the program's current status and future development.

Planning - Look both externally and internally to see what changes or trends will impact your program in the next 5 years. What changes in the discipline will impact your program? Where do you want the program to be in five years? What goals and objectives will your program set in relation to the district's mission and goals?

Conclusion –

Not quite an executive summary but asks that recommendations identified throughout the review be prioritized. In addition to the recommendation, major needs are identified and strategies developed to implement recommendations and needs are to be in the conclusions.

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I. Overview

A. Description of Program

The Heating, Ventilation, Air Conditioning and Refrigeration (HVACR) program at El Camino College offers theory, training in repair of HVACR equipment, troubleshooting strategies, customer service, electrical and control applications to students seeking an associate in science degree or a certificate. The program prepares students for employment in the field and provides upgrade opportunities for currently employed personnel. Competencies will be assessed in accordance with the Environmental Protection Agency (EPA) certificate criteria and Air Conditioning and Refrigeration Institutes (ARI) recommendations. Students completing the program may expect to enter industry as an advanced apprentice or entry-level HVACR technician.

B. Status of Previous Recommendations

The Instructional program review program validation report Academic year: 1994-1995, and the Instructional program review department/program self-study report academic year: 1994-1995, were both accessed for this current program review report. Many of the factors concerning the HVAC/R department program identified in those reviews, keeping the curriculum current, replacement of lab equipment, need for computer software for courses relating to Title 24 and addition of a mechanical code course, have been meant and may no longer be relevant. Certainly concerns regarding replacement of lab equipment and keeping the curriculum current are still relevant and are addressed at other points in this review.

II. Program Statistics

A. Demand: FTES by Course/Program

Instructions: Analyze the **FTES by Course/Program** using 1st 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-2003)	Year 2 (Fall-2004)	Year 3 (Fall-2005)
AC&R 5 (combined lab)	5.52	5.52	4.46
AC&R 6		5.74	5.31
AC&R 8	2.66		
AC&R 21 (combined lab)	13.38	9.77	9.77
AC&R 22 (combined lab)	12.11	11.05	12.11
AC&R 23	4.25	4.89	3.19
AC&R 25 (combined lab)	4.89	4.67	3.40
AC&R 27	4.89		
AC&R 30	2.76	2.76	2.02

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

The AC&R 21 and 22 classes (Beginning Air Conditioning & Refrigeration Classes) are the highest percentage FTES courses in the program.

- What are you doing to respond to trends?

In the future, if the budget will allow, add AC&R 22 to the spring schedule.

- Should a recommendation be written addressing the data? Yes No

The HVAC&R program could increase FTES for the college if our budget were to increase and funds could become available for marketing the program outside the college.

B. Offerings: Fill Rate*

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:

	Year 1 (Fall 2003)	Year 2 (Fall 2004)	Year 3 (Fall 2005)
Day classes	157%	162%	125%
Evening classes	103%	82%	94%

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

The day program percentage has dropped a little but is still above the 100% goal. Evening classes have had somewhat of drop in enrollment but still maintains a higher than normal rate of students. This slight drop could be due to class rescheduling and a loss of an instructor in the program.

2. What adjustments are indicated?

Class rescheduling

3. Should a recommendation be written that addresses the data? Yes No

* Percent of fill of each class 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
AC&R 5 (combined lab)	29%	29%	20%	69%	NA	NA	NA	NA
AC&R 6	29%	29%	20%	69%	NA	NA	NA	NA
AC&R 8								
AC&R 21 (combined lab)	29%	29%	20%	69%	NA	NA	NA	NA
AC&R 22 (combined lab)	29%	29%	20%	69%	NA	NA	NA	NA
AC&R 23	29%	29%	20%	69%	NA	NA	NA	NA
AC&R 25 (combined lab)	29%	29%	20%	69%	NA	NA	NA	NA
AC&R 27	29%	29%	20%	69%	NA	NA	NA	NA
AC&R 30	29%	29%	20%	69%	NA	NA	NA	NA

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

After reviewing the data above and the student surveys, the class scheduling is inline with the student demands. Class sizes are larger in the night program than the day due to the fact that night student's work during the day, which makes the night program have a larger percentage.

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

If we could offer classes in the early afternoon and form some sort of articulation agreement with the surrounding high schools in the area and get help from the college with a higher budget, the FTES quotas would increase. Another full time instructor would have to be added to the program to accommodate the influx of students into the program. Improved marketing at the high school level could help increase class sizes. With the added faculty there would be more time to go out to the high schools and talk to the students.

3. Should a recommendation be written addressing this area? Yes No

A recommendation should be written through the proper channels within the college that would address this area. There are a lot of organizations within the college that have direct contact with the surrounding high schools that could help the college and the program with this issue.

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?

The data indicates a 90% retention rate throughout the HVAC&R program.

2. Should a recommendation be written addressing the data? Yes No

With the high level of retention in the HVACR program students are in the lab working more on equipment; therefore, a much larger supply budget is needed to help students get a better understanding of the HVACR Industry requirements.

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?

Obviously, because the night classes have more students, there was a much higher ratio of A and B than the day program. After looking at the percentages between day and evening they were almost equal. If there were a trend that came from all of this data it would be that instructors might be grading a little soft. This could be studied further if there were a full time faculty member in the evening program that would be able to monitor the issue closer.

2. Should a recommendation be written addressing the data? Yes No

If it were in the best wishes of the college and the program a recommendation for another full time faculty member should be addressed. The situation if it was an important issue could be monitored by the full time faculty member in the evening program and compare the results with the full time day faculty member.

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

Presently, there are no courses on the list that need to be inactivated. With the help of the advisory committee recommendations this may change in the future to update the program to meet industry standards.

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? N/A

3. Should a recommendation be written addressing the data? Yes No

There should always be a recommendation, should there be future changes to the program with the help of the advisory committee suggestions. With the emergence of electronics in the HVACR Industry, it will create a need for new classes. New refrigerants, because of environmental issues will create new classes. Government regulations concerning energy efficient equipment will also create a need for new classes.

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

All courses at the present time are consistent with current practice in the field but as industry needs change so will the curriculum.

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

As the industry changes so should curriculum. With the advice of the advisory committee the HVACR program curriculum will change in the future.

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.**

Air Conditioning 5 and 32 should eliminate the prerequisite needed to get into these two classes. With the growth in the HVACR Industry all classes should be reviewed in the future to assist the students and the program with specific course requirements.

5. If the program offers a degree and/or certificate, list them and indicate when the requirements were last reviewed?

**Associate of Science Degree Air conditioning and Refrigeration
Certificate of Completion HVAC and Refrigeration
Certificate of Air Condition
Certificate of Refrigeration
Certificate of Air Conditioning and Refrigeration Electric Controls**

The degree and certificates were last reviewed in the Fall of 06.

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

The only inconsistency was in the amount of certificates offered in the program. Certificates are a useful tool when students are out of the program and trying to get employment in the HVACR Industry.

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

8. Should any recommendations be written that address the above responses? Yes No

Curriculum is an important facet of the HVACR program at El Camino College and is always changing due to government regulations and environmental issues. The advisory board makes recommendations for new classes as the industry's needs are constantly changing. El Camino College and the instructors must be aware of these needs and be willing to support the recommendations for the HVACR program.

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, 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?
2. What problems, if any, are there in articulating these courses?
3. Should a recommendation be written addressing above responses? Yes No
(If yes, list.)

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?

Outside the program Cooperative Career Education is offered to any student who participates in a work related field, depending on funding by the college. Inside the classroom students learn by installation, troubleshooting and repairing HVACR equipment supplied through the college when proper funding is available to purchase the equipment. To properly promote student success the college must help the program with enough supply budget to ensure that students will be able to work with equipment. At present the supply budget hasn't changed in the last ten years making it very difficult for the program to promote student success.

2. Should a recommendation be written addressing above response? Yes No

With the advise of the advisory committee and the college support toward student success, a supply budget must be established that ensure the HVACR program can provide the proper support to promote student success.

2. Assessment

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

A) Courses-**The courses are divided into two types, lecture and lab. The lecture classes are evaluated based on the retention and final assessments of the materials as presented through the course of the semester. This includes but is not limited to materials presented by text, video, CD's and lecture notes. The lab classes are evaluated also in this manner but include repair, maintenance, troubleshooting and installation of HVACR equipment.**

B) Program-**The program is also validated in terms of students outcomes based on the ability of students to successfully complete the degree or certificate program. Another way we can validate student outcomes is by placement in the HVACR industry.**

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

By continuing to address the needs of the program in terms of curriculum development, future modifications of course offerings to comply with HVACR industry standards and EPA regulations. Also the need for facility/equipment upgrades.

3. Should a recommendation be written addressing this area? Yes No

Continue to further refine how we do program assessment.

IV. Program Requirements

A. Instructional Support

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

Libraries & Programs:

	Library	x	Special Resource Center		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	WIT(Women in Trades) X
x	EOP&S/CalWORKS	x	Transfer Center		First Year Experience		
	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				LRC Tutorial Program
	CAI Windows Lab		Math & Science Lab				Math Tutoring
	TOP Lab		Keyboarding Center				SRC Tutorial Program
	Hawthorne BTC					x	EOP&S Tutoring

Inglewood Center					
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Faculty Support Services:

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

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

Yes, there is a constant demand for training in the HVACR Industry and El Camino College is reluctant in providing the training. Once a student leaves the HVACR program he is constantly training for the new equipment that the industry provides. The instructors at El Camino College also have a need to be trained on a yearly basis. If we do not understand the new equipment and how it functions and operates then we are unable teach our students properly. We have been failing the students who have come to our program to learn a valuable trade.

3. Should a recommendation be written to address your needs? Yes No

Training should be offered every year to a full time instructor and an adjunct instructor.

B. Facilities and Equipment

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

Yes the program makes effective use of the facilities provided on what little equipment the college supplies the program. The lab has been divided into six separate sections which include commercial and domestic refrigeration equipment, an air conditioning department, a heating department, a pneumatic controls department and an electrical applications section.

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

The facilities are adequate; however, the equipment and supplies are not adequate to support a successful program. Most of the equipment the students work on is 25 years or older and there is a supply budget that will support only a quarter of a semester.

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

The facilities are not adequately maintained by the college facility support division. Facility support seems to ignore the lab when lighting and any repair needs are warranted.

4. Should a recommendation be written addressing the data? Yes No

In order for the HVACR program to be a success for the students and the college, a sufficient amount of funding must be directed toward the program. An adequate supply budget will ensure that a good program will become a great success toward building the HVACR program into one of the best in the state. Facility support needs to properly maintain the lab on a

preventative maintenance program and not wait until the lab is falling apart.

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): # 2.68

Number of full-time FTEF: # 1

Number of adjunct FTEF: # 1.68

FT/PT load ratio: 37/63

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

The numbers haven't changed in the last ten years or the last review.

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

The data indicates that the program is being restricted to only one full time faculty and adjunct faculty are the main instructional core.

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

The night students are suffering the most because proper information about the program and certifications are not being supplied to them. This is one big reason that the certificate ratio is very low. With another full time faculty in the program, the certificate ratio will climb.

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

5. How does faculty maintain currency in their field?

Yearly supply budget. The majority of the funding for the HVACR program comes from state and local sources and donations from industry. Since HVACR is a vocational program, additional funding from Carl Perkins and VTEA funds are received.

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)
Cafarchia, Vic	N/A	N/A	N/A	N/A	N/A

- 6a. How does this data impact the program?

At present there is no impact on the program.

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

Not in the near future but in about five years there may be some effects on the program.

7. From this information, can you identify present and future staffing needs? Yes No

Yes. Present staffing needs have to be addressed in terms of FTES allocation for the HVACR program. The department is poised for growth in all areas pending FTES allocation. Future staffing for the HVACR program should be a consideration to accommodate another full time instructor.

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

At present there is an adjunct position open for a HVAC Electronic instructor and the department has requested for another full time instructor.

9. Should a recommendation be written addressing the data? Yes No

Yes, a recommendation to hire a another full time instructor for the HVACR program should be addressed. With the program moving upward the college needs to take a serious at what it can do to make this happen.

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?

Yes, all instructors in the program have a clear idea of what is happening and where its future is heading. Any changes to the program will come by way of the advisory committee and the HVACR Industry recommendations. In order for the HVACR program at El Camino College to adapt and continue to be successful for the students as well as instructors, it needs to adhere to the needs of the industry.

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

At present the data supplied is sufficient for the HVACR program. The advisory committee plays an important role in supplying the program of any future changes.

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

The effects of global warming around the world and the Environmental Protection Agency laws and regulations will dictate the needs of the HVACR program in the next five years.

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

Refrigerants will be changing due to global warming concerns and HVACR equipment will also change to meet the specifications for the new refrigerants. Our program at El Camino College must respond to these changes in the future to provide our students with the proper training on equipment they will need to service in the industry.

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

In the next five years I would like to have the college be more responsive to our needs and do for the program what they have not done in the last ten years. The program would like to see more non-traditional participation and an increase in certificates and degrees. I would like to see a lab that would be more inviting to new students and the right kind of tools and equipment needed to run a successful program.

6. Should a recommendation be written addressing the data? Yes No

With the help of another full time instructor more data could be collected on the night program students and a better understanding of the certification and degree process could be explained with more clarity to the students.

V. Conclusion

1. Prioritized Recommendations:
 1. **The HVACR program will experience steady growth in the future. The environmental control of buildings, EPA regulations on refrigerants and government laws on new manufactured equipment will require substantial training for all instructors in the HVACR program.**
 2. **A greater reliance on computer control will require additional provisions. Upgrading equipment is an ongoing need. The HVACR program must be able to provide training on the proper equipment that the advisory committee and industry recommends.**
 3. **The staffing is not adequate to handle the projected increase in FTES and will rely on additional part-time faculty and staff to support the program. An additional full-time faculty member is projected in the 1-2 year timeframe.**
 4. **As the curriculum expands to cover new technology, faculty will continue to develop curriculum to match industry demand.**

2. Major Needs:
 1. **New upgraded equipment that meet industry and EPA guidelines for the lab.**
 2. **Safe tools and adequate supplies.**
 3. **Instructor training.**
 4. **Instructor(s) hiring search (Immediate need: Part-time, Long term: Full-time)**

3. Strategies:
 1. **Prioritize equipment upgrades for the HVACR lab.**
 2. **Discuss with adjunct faculty training schools to attend that would improve the HVACR program.**
 3. **Propose new HVACR courses through the Division Curriculum Committee.**
 4. **Talk to faculty and deans as appropriate regarding the development of new curriculum.**
 5. **Survey other community college HVACR programs to more effectively develop new course and certification proposals.**