



## HVAC [1]

### Main

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#### Overview

**Academic Year** 2022 - 2023

**Originator** Wise, Bill

**Division** Curriculum Division 50 - Career Technical Education

**Department** Vocational

**Program** HVAC

**Program Type** Instructional

### Co-Contributors

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Contributor

### Program Mission and Accomplishments

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## Gavilan College Mission Statement

**Gavilan College actively engages, empowers and enriches students of all backgrounds and abilities to build their full academic, social, and economic potential.**

**Provide a brief overview of how the program contributes to accomplishing the mission of Gavilan College. In addition to a basic overview of your program's structure and services, be specific in connecting your program's services to elements of the mission statement (300 words or less).**

Gavilan College's HVAC program is a part of the Career Education Division and is designed to prepare students to enter the Heating, Air Conditioning, and Refrigeration Technology field. Instruction includes both theoretical and practical application with heating, air conditioning, and refrigeration machinery and with electrical equipment, as well as related mathematics. Students who complete the program will have the knowledge and skills essential for employment in a variety of careers; including AC Technicians, Heating Technicians, Refrigeration Technicians, HVAC Mechanics, and HVAC Installers. Upon completion of the program, our students will have the ability to earn a living wage, which is very tough to do in the greater bay area. The students are learning skills that will make them employable anywhere in the world. It is a profession that is in high demand.

**On the PIPR website, locate and review your previous program plan and subsequent annual updates. After studying, please list:**

## Response and follow-up to previous program reviews

- 1.
2. **EPA 608 Testing Certification**

**EPA 608 Training and Certification testing was included in HVAC 205 spring 22**

**14 students have been trained and certified on EPA 608.**

- 3.

**Have the services or courses of your program changed over the past three years? Please explain (300 words or less).**

There are six courses totaling 24 units to complete the HVAC program.

PROGRAM REQUIREMENTS: (24 UNITS)

HVAC201 Basic Electrical Theory 4

HVAC202 Basic Refrigeration 4

HVAC203 Heating Systems 4

HVAC204 Air-Conditioning and Heat Pumps 4

HVAC205 Commercial Refrigeration and Ice Machines 4

HVAC206 HVAC Controls 4

## Student and Program Outcomes

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College Goal for Student Achievement

**The following questions refer to data regarding student achievement.**

**Find your discipline's course success information. Consider your department success rate trends over the last three years. Compare your overall success to the college average.**

**Are these rates what you expected after comparing with the college average? Are there any large gaps? Is there anything surprising about the data? What trends are suggested by the data?**

**Now find your division persistence information. Consider your retention rate trends over the last three years. Compare your overall retention to the college average.**

**Are these rates what you expected after comparing with the college average? Are there any large gaps? Is there anything surprising about the data? What trends are suggested by the data.**

**Path: Tableau - Program Review/ Equity - D2. One Year Persistence Rate**

Success

**The following questions refer to data regarding student achievement.**

**What are your set goals for course success? Do your individual course and department rates meet this goal?**

**Helpful Question: If your rates for success are lower than your goals, what are your plans to improve them (200 words or less)?**

**Path: Tableau - Program Review/ Equity - D3. Course Rates by Unit**

Success rate 78.9%

Retention rate 93%

**How many students did your area serve (if you don't have an exact count, please provide an estimate)? How did they perform in comparison to those that did not use your services, if applicable? Given this information, how has your service or area supported student success and retention over the past three years (200 words or less)?**

**See Success and Retention dashboard in Tableau's Program Review section.**

Success rate 78.9%

Retention rate 93%

## Equity

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### Equity

**Gavilan College has identified the following populations as experiencing disproportionate outcomes: Males, African American, Native American, Students with Disabilities and Foster Youth.**

**For EOPS/ CalWORKs, MESA, TRiO, Puente, and VRC: LOCATE Success and Retention dashboard in Tableau's Program Review section. Examine your equity results over the last three years. If there are differences in success rates and/ or retention across groups, comment on any differences in success rates across groups. Helpful Questions: What current factors or potential causes can be connected to these areas of disproportional impact? How might your program or department address student equity gaps (200 words or less)?**

**For all other areas, how can your area help increase disproportionate student success? Contact your support team for any needed assistance in interpreting these data (200 words or less).**

**Please find Equity information in Tableau's Success and Retention dashboard.**

**Contact your support team for any needed assistance in using Tableau.**

Headcount , Success% , Retention% by Gender

Total 314 - 65.6%, 84.3%

Male 293 - 67.1%, 84.5%

Female 10 - 46.7%, 73.3%

### Our Equal Employment Opportunity (EEO) Plan States

"Ensuring equal employment opportunity involves creating an environment that fosters cooperation, acceptance, democracy, free expression of ideas and is welcoming to persons of all gender expressions, persons with different abilities, and individuals from all ethnic and other groups protected from discrimination."

What is your area doing to support district efforts in creating an inclusive college environment? With what departments are you partnering? Did you identify barriers and institute change? How is you creating/ ensuring diversity in your department or in the classroom?

Some examples might be sponsoring cultural events and diverse speakers on issues dealing with diversity, exploring how to infuse diversity into the classroom and curriculum, integrating diversity into the evaluation of employees, promoting learning opportunities and personal growth in the area of diversity, or evaluating how the physical environment can be responsive to diverse employee and student populations.

Number of students Success, Retention by Ethnicity

Ethnicity , Headcount, Success % , Retention %

Total	314	205	65%	264	84.1%
Hispanic/Latinx	184	113	61.4%	153	83.2%
Multiple Ethnicities	58	39	67.2%	47	81%
White	44	34	77.3%	40	90%
Filipino/Pacific Islands	12	10	83.3%	10	83.3%
unknown	11	5	45.5%	10	90.9%
Asian	4	4	100%	4	100%
Native American	1	0	0%	0	0%

Find your Distance Education success information. If distance education is offered, consider any gaps in success rates between distance education and face-to-face courses. Do you notice any trends? Do these rates differ?

Path: Tableau Program Review/ Equity D9. Course Success Rates Locate your department. Filter by Delivery Methods

Helpful question: If disparity exists, how do you plan on closing the achievement gaps between distance education and face-to-face courses (300 words or less)?

### Learning and Area Outcome

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**Have you reviewed all of your Service Area Outcomes (SAOs) to ensure that they remain relevant for evaluating the performance of your area?**

**Are your SLOs, PLOs, SAOs, and ILOs mapped in CurriQunet?**

Yes

**Are your SLOs, PLOs or SAOs up-to-date in CurriQunet?**

Yes

**Have all of your SLOs, PLOs or SAOs been assessed in the last five years?**

Yes

**Have you reviewed all of your SLOs/SAOs to ensure that they remain relevant for evaluating the performance of your program?**

Yes

**If you answered no to any of the above questions, what is your plan to bring SLOs/PLOs/SAOs into compliance?**

Answered Yes

## Outcome Assessments

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Student Learning Outcomes (SLO) or Service Area Outcomes (SAO)

**Review the SLOs or SAOs data located in CurriQunet. What is your department's acceptable achievement score goal for each outcome?**

100%

Institutional Learning Outcomes (ILO)

**How do your SLOs/SAOs support the college ILOs or how do your PLOs support the college ILOs? Be specific.**

They have not yet been aligned.

**Are you meeting your SLO/SAO success goals? What patterns stand out in your results? If your SLO/SAO results are lower than your goals, what are your plans to improve them?**

Yes

## Curriculum and Course Offerings Analysis

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**Are there plans for new courses or educational awards (degrees/certificates) in this program? If so, please describe the new course(s) or award(s) you intend to propose (200 words or less).**

There is a plan to offer EPA certification elective class

**Provide your plans to either inactivate or teach each course not taught in the last three years (200 words or less).**

Each Class in the HVAC program has been taught in last 3 years

**Consider and analyze your location, time, and delivery method trends. Are classes offered in the appropriate sequence/ available so students can earn their degree or certificate within two years? Are courses offered face-to-face as well as have distance education offerings? Are they offered on the main campus as well as the off-site areas? Different times of day? (300 words or less).**

There are 6 Core Classes required to earn a Degree or Certificate. All the 6 classes can be completed within two years.

The classes are offered in a face-to-face lab on the main campus, as well as hybrid distance education offerings.

Classes are offered during the week, Monday to Friday, and on weekends, on Saturdays.

## Program and Resource Analysis

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**Please list the number of Full and Part Time faculty, staff and/ or managers/ administrator positions in this program over the past three years. Focus on your individual program.**

### Program and Resource Analysis

1. **2019**

**How many students did your area serve in this year (if you don't have an exact count, please provide an estimate)?**

50

**Full Time Faculty**

0

**Part Time Faculty**

4

**Full Time Staff**

0

**Part Time Staff**

0

**Full Time Mgr/Admin**

0.00

**Part Time Mgr/Admin**

0.00

2. **2020**

**How many students did your area serve in this year (if you don't have an exact count, please provide an estimate)?**

50

**Full Time Faculty**

0

**Part Time Faculty**

2

**Full Time Staff**

0

**Part Time Staff**

0

**Full Time Mgr/Admin**

0.00

**Part Time Mgr/Admin**

0.00

## 3. 2018

**How many students did your area serve in this year (if you don't have an exact count, please provide an estimate)?**

30

**Full Time Faculty**

0

**Part Time Faculty**

4

**Full Time Staff**

0

**Part Time Staff**

0

**Full Time Mgr/Admin**

0.00

**Part Time Mgr/Admin**

0.00

#### Faculty Percentages

## Percentage Full to Part Time Faculty

Year:2018

FT = 0%

PT = 100.00%

Year:2019

FT = 0%

PT = 100.00%

Year:2020

FT = 0%

PT = 100.00%

**How have and will those with reassigned time, grant commitments and activity, projected retirements and sabbaticals affect personnel and load within the past in the next three years? What future impacts do you foresee (200 words or less)?**

One Part time instructor retired in 2022

#### Additional Comments

#### Evaluation of Resource Allocations

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List the resource allocations from all sources (e.g., annual college budget request appropriations, Guided Pathways funds, grant funds, etc.) received in the last three years. For annual college budget request appropriations, reference your previous three-year plan and annual updates.

Please evaluate the effectiveness of the resources utilized for your program. How did these resources help student success and completion? For college budget request appropriations, list the result of the evaluation strategy outlined in your previous three-year plan and annual updates. For all other sources of funding, list the results of the evaluation strategy contained within the program or grant plan.

Did you receive additional funds?

No

## Program Productivity

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### Program Productivity Measurements

Determine the number of students you assist annually. Using the data provided by the business office, calculate your average cost effectiveness per student. If you do not have student contact, please fill out Total allocated budget and Total spending.

### Year and Student count

Evaluate your program costs. Are your costs in alignment with your budget? If not, what improvements can be made? Please explain any trends in spending, inconsistencies and unexpected results.

## Integrated Planning and Initiatives

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What other areas is your program partnering with (i.e. guided pathways, grant collaboration, etc.) in new ventures to improve student success at Gavilan College? What is the focus of this collaboration? Helpful question: What are the department and your Integrated Planning/ Guided Pathways partners' plans for the next three years (200 words or less)?

Our advisory board can provide feedback to the program on what the industry needs are. This information can help the instructors prepare the students for success. We have had a lot of community partners show interest in the program. Local unions and non-union facilities, who are looking to hire our students, can provide us with information about the skills the students need to be successful. Local 393 the pipe fitter's union from San Jose and Local 467 the pipe fitter's union from San Mateo attended our open house. Both unions were looking to recruit students. Also, J & J Air Conditioning and Cushman Wakefield attended our open house, they were also looking to recruit our students. Again, these organizations will be helpful in providing information about industry needs. The program will look for assistance from Gavilan's CE Counselor and CE and Strong Workforce Senior Program Specialist to assist with student enrollment, possible internships, and job placements.

## Other Opportunities and Threats

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Review for opportunities or threats to your program, or an analysis of important subgroups of the college population you serve. Examples may include environmental scans from the Educational Master Plan, changes in matriculation or articulation, student population, community and/ or labor market changes, EMSI data and etc. Helpful Question: What are the departmental plans for the next three years (200 words or less)?



Employment of heating, air conditioning, and refrigeration mechanics and installers is projected to grow 5 percent from 2021 to 2031, about as fast as the average for all occupations.

About 40,100 openings for heating, air conditioning, and refrigeration mechanics and installers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

## Employment

Commercial and residential building construction is expected to drive employment growth. The growing number of sophisticated climate-control systems is also expected to increase demand for qualified heating, air conditioning, and refrigeration (HVACR) technicians.

Repair and replacement of HVACR systems is a large part of what technicians do. The growing emphasis on energy efficiency and pollution reduction is likely to increase the demand for HVACR technicians as climate-control systems are retrofitted, upgraded, or replaced entirely.

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Heating, Air Conditioning, and Refrigeration Mechanics and Installers,

at <https://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm> (<https://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm>) (visited April 12, 2023).

**What are you discovering about instruction and/or services in a remote environment that you would want to maintain post-pandemic?**

**What kinds of issues are exacerbated or emerging that are likely to remain, unless addressed?**

## Additional Questions

**Please consider providing answers to the following questions. While these are optional, they provide crucial information about your equity efforts, training, classified professional support, and recruitment.**

**1. Does your division (or program) provide any training/mentoring for faculty and/ or classified professionals regarding professional development?**

Yes

**2. If there is a need for more faculty and/ or classified professional support in your area, please provide data to justify request. Indicate how it would support the college mission and college goals for success and completion.**

Yes , there is a need for more faculty.

**3. What, if anything, is your program doing to assist the District in attracting and retaining faculty and classified professionals who are sensitive to, and knowledgeable of, the needs of our continually changing constituencies, and reflect the make-up of our student body?**

There is a need to retain HVAC Faculty

**4. Are there program accomplishments/ milestones that have not been mentioned that you would like to highlight?**

10 students are graduating from HVAC program in 2023

**Please share any recommendations for improvements in the Program Integrated Plan and Review process, analysis, and questions. Your comments will be helpful to the PIPR Committee and will become part of the permanent review record.**

Training on PIPR

## Goals

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### Three-Year Program Plan Goals

1. **improve success and retention rates in HVAC program**

**Connection of Goal to Mission Statement, Strategic Plan ([http://www.gavilan.edu/administration/master\\_plan/docs/SP\\_GoalsStrategiesDraft-final.pdf](http://www.gavilan.edu/administration/master_plan/docs/SP_GoalsStrategiesDraft-final.pdf)) and SAO Results**

Within three years, an increase in the number of students completing HVAC associate degrees ,and certificates, and specific skill sets that prepare them for in-demand jobs.

**Proposed Activity to Achieve Goal\*\***

Ensure faculty are well trained and qualified teaching courses in accordance with the Strategic Enrollment Management Plan to support student success

**Responsible Party**

HVAC dept

**Fund amount requested. If a collaboration, what % required from each partner?**

\$10,000

**Total Three Year Resource Allocation Request**

10000

**Timeline to Completion Month / Year**

2026

**How Will You Evaluate Whether You Achieved Your Goal**

Increased success and retention rate

## Executive Summary

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**Please provide a brief executive summary regarding program trends and highlights that surfaced in the writing of this report. Summarize, using narrative, your program goals for your next three years. Your audience will be your Peer Review Team, the PIPR Committee, President's Cabinet, Dean's Council, ASGC, Academic Senate, Budget Committee and Board of Trustees (300 words or less).**

The Heating, Ventilation and Air Conditioning (HVAC) Technology program is one of six new regional Career Education (CE) programs established at Gavilan College as a part of the State of California Strong Workforce Funding (SWF) initiative, which is intended to expand quality community college CE and workforce development courses, programs, pathways, credentials, certificates and degrees, leading to high demand, high wage jobs in the region. There is a shortage of talent in the HVAC industry. Once a person finishes the program, they should have no problem finding gainful employment. The annual gap between demand and supply from HVAC programs is about 1,325 in the region. The three top-paying municipalities for HVAC services are in the bay area ,California, according to the Bureau of Labor Statistics(April 2023), San Jose-Sunnyvale-Santa Clara, CA, \$ 88,990, San Francisco-Oakland-Hayward, CA, \$ 80,300, Santa Cruz-Watsonville, CA, \$ 72,060

## Attach Files

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Attached File