

Comprehensive Program Review Report



Program Review - Environment Control Technology

Program Summary

2021-2022

Prepared by: Bill Reilly

What are the strengths of your area?: Student Success:

For 2020-2021 the student success rate of all ECT classes increased to 95.8%. All ECT courses have high success rates at 96%. The average class size is 36.89 FTES.

Equity:

The ECT program has a diverse student population with students from various race/ethnicities. Overall Hispanic student success rate is 75.4%, white is 81.1%, Asian is 82.2%, Filipino is 85.25 success rates. This data indicates that students of all races succeed over 75% in all the courses. This data excluded EW, which did negatively impact the diversity enrollment at COS in 2020-2021.

Degrees and Certificate Awards:

The ECT program produced 1 AS degree; 28 CT/HVAC Certificates; in the last three years (2019-2021) there have been 71 awards - 7 AS degrees; 63 CT/HVAC certificates.

Employment:

The Environmental Control Technology (ECT) field (aka, Heating Ventilation, Air Conditioning [HVAC]) continues to have robust labor demand. Attached labor market information from CCCCO and EMSI indicate 257 annual openings within the Central Valley South sub-region. Additionally, employment demand outpaces graduate supply by over 200. Such strong need for employees helps drive enrollment. Consequently, the program turns away several potential students due to schedule, space, and instructional limitations. Average wait list each semester is 17-20; therefore we turn numerous students away from this program each semester. The ECT area has strong ties to industry partners; for example about 17-23 employers attend a contractors BBQ that is hosted at the Tulare Annex each spring, however, we were unable to host due to COVID the last two spring semester. For the most part, graduates from last semester all have found employment in the field.

Instruction:

The full-time instructor, Bill Reilly, is a dedicated educator with thirty five years of HVAC teaching experience. He also continues to operate his own HVAC business which ensures he is continuously up-to-date with current trends, environmental issues, and industry standards. He also participates in industry-related professional development, updates, seminars, trainings, etc.

Graduates:

COS ECT graduates are heavily recruited in the immediate area due to the reputation of the program and the education provided. Graduates from Spring 2021 all found jobs in the HVAC, as far as instructor knows. Many employers are COS/HVAC graduates and prefer to hire COS graduates over other programs.

What improvements are needed?: 1. Average wait list each semester is 17-20; therefore we turn numerous students away from this program each semester. Previously this was an evening program. Faculty and Dean will begin to explore a part time/weekend program to see if we can address the high demand for this program. Options for a part time HVAC program will be presented to the Advisory Board to get industry feedback. Dean will begin the process of adjunct recruitment.

Describe any external opportunities or challenges.: 1. Adjunct hiring has been a challenge

Overall SLO Achievement: SLO Assessment is complete for the current cycle. Next assessment date is Fall 2021. See attached.

Changes Based on SLO Achievement: No changes are needed.

Overall PLO Achievement: PLO Assessment is complete for the current cycle. Next assessment date is 2021. See attached.

Changes Based on PLO Achievement: No changes are needed.

Outcome cycle evaluation: Outcome assessment is complete for the previous cycle. The next assessments are due in 2021.

Related Documents:

[ECT LMI.html](#)

[ECT LMI, 2021 \(1\).xlsx](#)

[ECT PLO Assessment Results - Certificate.xls](#)

[ECT PLO Assessment Results - Degree.xls](#)

[ECT Assessment Results Course SLO Report.xls](#)

Action: 2021-2022 Increase enrollment in HVAC/ECT by adding evening program

Recruit, hire and train an adjunct instructor

Leave Blank:

Implementation Timeline: 2021 - 2022

Leave Blank:

Leave Blank:

Identify related course/program outcomes:

Person(s) Responsible (Name and Position): Jonna Schengel; Bill Reilly

Rationale (With supporting data):

Priority: Medium

Safety Issue: No

External Mandate: No

Safety/Mandate Explanation:

Resources Description

Personnel - Faculty - Adjunct (Active)

Why is this resource required for this action?:

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 20000

Link Actions to District Objectives

District Objectives: 2018-2021

District Objective 2.1 - Increase the percentage of students who earn an associate degree or certificate (CTE and Non-CTE) by 5 percentage points over three years

District Objective 2.4 - By 2021, Increase the percentage of CTE students who achieve their employment objectives by 5 percentage points

Action: 2021-2022 Improve student diagnostics through updated AC trainers

Increase student success and SLO completion through AC Trainers; computer controlled which is the industry standard.

Leave Blank:

Implementation Timeline: 2021 - 2022

Leave Blank:

Leave Blank:

Identify related course/program outcomes:

Person(s) Responsible (Name and Position): Bill Reilly

Rationale (With supporting data):

Priority: High

Safety Issue: Yes

External Mandate: No

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Safety/Mandate Explanation:

Resources Description

Equipment - Instructional - This purchase is VTEA eligible. (Active)

Why is this resource required for this action?: To purchase AC computer trainers; which expensive, \$30,000 for two, which will meet program needs.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 30000

Related Documents:

[ECT LMI, 2021 \(1\).xlsx](#)

[Advisory Committee Meeting March 2021 \(1\).jpg](#)

Link Actions to District Objectives

District Objectives: 2021-2025

District Objective 2.1 - Increase the number of students who earn an associate degree or certificate (CTE and non-CTE) by 5% from 2021-2025.

District Objective 2.4 - Increase the percentage of CTE students who achieve their employment objectives by five percentage points (job closely related to field of study and attainment of a livable wage) and the number of CTE students who successfully complete 9+ CTE units in a single year by 10% from 2021-2025.

Action: 2020-2021 Continue to support student success in the hybrid format for 2020-2021.

Provide students the technology support as well as face to face access to hands labs that are required to complete the ECT SLO.

Leave Blank:

Implementation Timeline: 2020 - 2021

Leave Blank:

Leave Blank:

Identify related course/program outcomes: All SLO are met with action.

Person(s) Responsible (Name and Position): Bill Reilly

Rationale (With supporting data): COS determined that Fall and Spring for 2020-2021 will be primarily online with some technical labs such as ECT allowed for face to face labs with social distancing, masks and lab disinfecting.

Priority: High

Safety Issue: Yes

External Mandate: Yes

Safety/Mandate Explanation: College and Chancellors Office have determined the online/hybrid teaching.

Update on Action

Updates

Update Year: 2021-2022

08/31/2021

Status: Action Completed

All ECT Students were provided laptops and access to technology which allowed 95.8% success rate.

Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Technology - Technology update of laptops; need additional Chrome books due to the hybrid classroom. (Active)

Why is this resource required for this action?: In order for student to succeed and pass the EPA 608 Refrigerant Licensing

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test.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 10000

Action: 2020-2021 Improve student diagnostic skills

Improve student diagnostic skills through training equipment purchase.

Leave Blank:

Implementation Timeline: 2020 - 2021

Leave Blank:

Leave Blank:

Identify related course/program outcomes: SLO #4, ECT282- upon completion of this course, students will be able to diagnose a Simugas computer simulator traininer with a score of 70% or better on a skilled exam.

PLO #1- Air Cond, Heating and Refrigeration Skill Certificate; at the end of this program, students will be able to electrically and mechanically diagnose and/or repair an HVAC system with basic entry-level skills

Person(s) Responsible (Name and Position): Bill Reilly

Rationale (With supporting data): The industry is constantly evolving requiring students to gain greater understanding of the fundamentals using the most recent technology updates being used by the industry. Due to retirement of full-time instructor, industrial advisory committee rational is currently unavailable. According to the US Dept of Labor's O-Net, Troubleshooting and Operation Monitoring are skills of high importance for HVAC technicians. See attached document (skills_49-9021-01.xls).

Advisory committee members and industry literature confirm the tremendous importance of diagnostic skill development for anyone working in this industry.

Priority: Medium

Safety Issue: No

External Mandate: Yes

Safety/Mandate Explanation: Industry partners have expressed interest in the diagnostic skills.

Update on Action

Updates

Update Year: 2021-2022

08/31/2021

Status: Action Completed

VTEA funds purchased several AC units that allow one student per unit to meet diagnostic SLO.

Impact on District Objectives/Unit Outcomes (Not Required):

Resources Description

Equipment - Instructional - Purchase diagnostic trainers - 5 per year. (Active)

Why is this resource required for this action?: Diagnostic trainers have to be purchased and updated on a regular basis.

Notes (optional):

Cost of Request (Nothing will be funded over the amount listed.): 30000

Action: 2020-2021 Provide each student a packaged unit heating/AC

Provide each student a package unit heating/AC in order to meet SLOs in timely manner. No need to purchase as industry will donate damaged units that can be used to meet with requirement.

Leave Blank:

Implementation Timeline: 2020 - 2021

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Leave Blank:

Identify related course/program outcomes: Relates to all SLO in ECT courses.

Person(s) Responsible (Name and Position): Bill Reilly; working with industry partners to donate equipment

Rationale (With supporting data): Currently ECT program has 20 package units; another 4 are need to provide one per student.

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Priority: Medium

Safety Issue: No

External Mandate: No

Safety/Mandate Explanation:

Update on Action

Updates

Update Year: 2021-2022

08/31/2021

Status: Action Completed

This equipment purchased is waiting to be delivered. VTEA funds paid for this equipment; and will be utilized in Fall 2021.

Impact on District Objectives/Unit Outcomes (Not Required):