Program: Chemistry
Division: STEM
Date: Fall 2019
Writer(s): Michael Ansell
SLO/SAO Point-Person: Michael Ansell

Audience: Deans, Vice Presidents of Student Services and Academic Services, All Planning and Allocation Committees. This document will be available to the public.

Uses: This Program Review will be used to inform the campus and community about your program. It will also be used in the processes of creating Division Summaries, determining College Planning Priorities and allocating resources. A final use is to document fulfillment of accreditation requirements.

Please note: Program Review is NOT in itself a vehicle for making requests. All requests should be made through appropriate processes (e.g. Instructional Equipment Request Process) or directed to your dean or supervisor.

Time Frame: This Program Review should reflect on program status during the 2019-20 academic year. It should describe plans starting now and continuing through 2020-21. This document also provides the opportunity to describe more long-term plans (optional).

Sections: The first section of this Program Review focuses on general program reflection and planning. The second section has specific questions to be filled out by all programs this year. The third section is a review of curriculum. The fourth section is a review of data for CTE programs. Only programs with curriculum need to complete Section 3, and only CTE programs need to complete Section 4.

Topics: The Program Review Glossary defines key terms. Writers should review this glossary before writing: https://bit.ly/2LqPxOW

Help: Contact Karin Spirn: kspirn@laspositascollege.edu

Instructions:
1) Please respond to each question as completely as possible.
2) If the requested information does not apply to your program, write "Not Applicable."
3) Optional: Meet with your dean to review this document before October 21.
4) Send an electronic copy of this form to Karin Spirn and your Dean by October 21.

Links:

Program Review Home Page: https://bit.ly/2Y0j7fW

Fall 2018 Program Review Updates : https://bit.ly/2GIWzsM

Frequently Asked Questions: https://bit.ly/2DHLnfj

Section One: Program Snapshot

A. **Program Description: Briefly describe your program, including any information or special features of your program that will provide helpful context for readers of this Program Review.**

   Examples of program descriptions can be found here: https://bit.ly/2VwjNvZ

MISSION: The Chemistry Program's mission is to serve the three diverse groups of students at Las Positas College:
☐ Transfer students majoring in the sciences and engineering; preparing for careers in medicine, pharmacy, or dentistry; or following a teaching pathway at primary, secondary, or postsecondary level.
☐ AA/AS and Certificate students enrolled in programs requiring knowledge of chemistry, for example, nursing, dental hygiene, viticulture, etc
☐ Students completing general education course requirements

CURRICULUM: The Program offers two degrees: an AS - Chemistry (Transfer Preparation) and an AA – Chemistry Education (modified to AS Chemistry Education in Fall 2018). Seven courses are regularly offered in the program: Chemistry 30A and 30B (Introductory and Applied Chemistry I and II), Chemistry 31 (Introduction to College Chemistry), Chemistry 1A and 1B (General College Chemistry I and II), and Chemistry 12A and 12B (Organic Chemistry I and II). In addition, Chemistry faculty have also taught Environmental Studies and Wine Science for the first time in Spring 2019.

HUMAN RESOURCES: Four full-time, tenured faculty members maintain the program with up to 12 part-time faculty, the support of 1 science lab coordinator and safety officer and 4 full-time laboratory technicians shared with the Biology program, the Dean of STEM, and one full time senior administrative assistant.

FACILITIES: The Program is primarily housed in Building 1800 which has three chemistry laboratories. Lab 1802 is primarily used for General Chemistry--Chem 1A and 1B students. It is fitted with individual fume hoods which are necessary for the level of chemical use in 1A and 1B and a conventional fume hood. Every week, up to 16 labs are held there with about 200 students. It is equipped with about 120 lockers. Lab 1805 is primarily used by Organic Chemistry 12A/12B students and 30B students. This lab is also equipped with individual fume hoods and a conventional fume hood. Labs 1802 and 1805 share a weighing room. Lab 1807 is primarily used by students in the introductory courses (Chem 31 and Chem 30A). It is not equipped with individual fume hoods but has 3 conventional fume hoods. Attached to the lab is a weighing room. Lab 1806 is the instrumentation room housing the NMR, the IR, the GC-MS, the melting point apparatus, and the polarimeter. Lecture classes in chemistry are primarily scheduled in classrooms 1816 and 1814, 1850 classrooms, and classroom 1060 in the new Classroom Building.

EQUIPMENT: The Chemistry lab equipment can be categorized as:
☐ analytical chemistry instrumentation (NMR, IR, GC-MS, AA, Polarimeter, melting point apparatus)
☐ standard lab equipment (fume hoods, burets, hot plates, Bunsen burners, pipets, logger pro data collection systems, laptop computers, gas storage equipment, pH meters,etc.)
☐ student locker equipment

ENROLLMENT MANAGEMENT: For SU 2019, FA 2019, and SP 2020, the number of sections offered by the program increased from 45 to 48 sections, some of which are double sections. There has been a steady increase in the total course enrollments for both fall and spring since 2013 and most of these classes are fully enrolled.   We tried to add a new, late start Chemistry 31 class in the fall of 2019 due to enormous wait lists but the last minute nature of this addition made staffing, scheduling, supporting and enrollment impossible.

SERVICES TO STUDENTS: Chemistry students are provided the opportunity to participate in Honor's Projects or Independent Studies. To support student success, faculty actively participate in science and engineering activities: e.g., planning for 4 science seminars every year, poster session, Chemistry Club, STEM-focused conferences (e.g., HSI-grant, Transforming STEM, Advanced Placement, ACS meetings, the Guided Pathways initiative, etc). Faculty also participate in partnership initiatives with companies (e.g. environmental monitoring and Form Factor) for potential internship positions, job prospects, and collaboration in developing curriculum.

LEARNING SUPPORT: The Chemistry Program provides many outside-the-classroom learning opportunities for students through full-time and part-time faculty tutorial hours in the Tutorial Center, participation in the Science and Engineering Seminar Series, internships, poster sessions, etc.

TECHNOLOGY USE: Lab 1802 is equipped with individual student laptops that run many specialized software. The Organic Chemistry instrumentation also requires special software to run. All instructors use Canvas and the website is maintained and updated by full-time faculty.

A complete, full-color description of our program with pictures can be found at our website:

http://www.laspositascollege.edu/chemistry/

B. IR Data Review: Describe any significant trends in your program's data from the office of Institutional Research and Planning. (Note: Not all Programs have IR data packets available; if your program does not have a data packet, you may note that in the response box). You may

also discuss any other data generated for your program by the Office of Institutional Research and Planning.

IR Data packets are available here: https://bit.ly/2IYaFu7

Course Success Rates Dashboard can be found at the bottom of this page: https://bit.ly/2Y9vGpl

In many ways, the data has not changed over the last year, although the program has continued to grow and be more and more diverse in every way.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW		
	Community Partnerships/Outreach		Facilities, Supplies and Equipment, Software		LPC Planning Priorities		Services to Students
	Course Offerings		Financial/Budgetary		LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items		Human Resources		Pedagogy	X	Student Equity
	External Factors		Learning Support		Professional Development		Technology Use

C. **Other Data Review (Optional): Describe any significant findings based on other data regarding your program. Possible sources of relevant information might include, but are not limited to, the following:**

- o **Data generated by your program**
- o **CEMC Data**
- o **Labor Market Data**

The Chemistry Program has continued to have a class fill rate of almost 100%, despite an overall decrease of 4% campus-wide. We hope that CEMC will take this into account when generating future FTEF allocations.   They always give us too little and then ask us to add classes at the last minute.   This is poor planning that results in difficulty in staffing, enrollment, marketing, and unnecessary stress for all concerned.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW		
	Community Partnerships/Outreach		Facilities, Supplies and Equipment, Software		LPC Planning Priorities		Services to Students
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	External Factors		Learning Support		Professional Development		Technology Use

D. Accomplishments: What plans from the 2018 Program Review or any previous Program Reviews/Updates have been achieved and how? You may also describe achievements that were not planned in earlier Program Reviews. Please highlight any positive impacts to students.

We continued to grow and added a 6th section of Chemistry 1A in the fall and additional Chem 31 sections in the spring.

In our fourth year of requesting a fourth full-time, the request was finally approved. We successfully hired two new full time faculty: one was a replacement for Adeliza Flores and one was a new position. These are the first full-time hires since 2006 and this was a great addition to the department.

All five laboratory technicians are fully staffed at this time.   We have an amazing group of people, they newest is Lina Chea, who started in March 2019. Carolyn Hillyer has been working here for about one year.   Despite adding sections both in Chemistry and Biology, our labs are extremely well supported and moral is high. We also have student assistants from time to time who are a big help.

New glassware, pH probes and other equipment was acquired last year through the IER process. This equipment is vital, since our lab supplies and equipment maintenance budgets have been cut dramatically.

An upgrade to our NMR, first acquired in 2006, was also purchased through an IER.   This instrument is now supported by a modern computer, some upgraded electronics, new software, and we should be in great shape for at least a decade.

We have continued to work extremely well with the Library and their Faculty and Support staff to update materials including reserves, reference books, and online databases.   We will need to continue to update and maintain these resources in collaboration with the amazing people in the library.

Mark an X before each area that is addressed in your response.			Definitions of terms: https://bit.ly/2LqPxOW		
	Community Partnerships/Outreach	X	Facilities, Supplies and Equipment, Software		LPC Planning Priorities	X	Services to Students
X	Course Offerings		Financial/Budgetary		LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items	X	Human Resources		Pedagogy		Student Equity
	External Factors		Learning Support		Professional Development	X	Technology Use

E. Uncompleted Plans: What plans from your 2018 Program Review have not been achieved and why?

We submitted a request for a 5th full-time faculty position, but this request was not fulfilled due to the College's budget constraints and other emergency replacements.   Without this new position, the Chemistry Program will continue to have less than 50% of our classes taught by a Full Time Professor.

We met with the SLO committee leadership (particularly Ann, Madeline, and Jenny), who donated their time.   We just completed mapping, SLO wording revision, the SLO catalog, automated course reminders, and planning. We now just need to train new faculty on the protocol and make sure that everyone assesses everything this spring.

Supplies and Equipment/Software: Our class offerings have increased by about 10% and all of our classes have critical laboratory component.   Glassware and equipment break and/or wear out, but our supplies budget was cut this year by 15%.   We have cut everything as tight as we possibly can and we have ordered large quantities of glassware through the IER process, but this is not sustainable. Our supply budget needs to be restored to previous levels and increased with increasing enrollment.

Both the GCMS and the AA have had significant problems lately.   The GCMS may need significant service and support which is not cheap. The AA will probably need to be replaced. The AA is an integral part of the curriculum for 8 classes each fall, 6 classes each spring, and 3 classes in the summer.

Facilities:

Our lab classrooms are at or near capacity.   There is a limit to how many more courses we can offer due to lack of classrooms.   There has been suggestions to offer classes on Friday evenings and Saturdays, but we do not have any lab technician support at these times and we cannot offer labs without their support.

Until a few years ago, General Chemistry students did not share lockers.   There are issues with breakage, theft, sabotage, and cleanliness when student share drawers and we cannot find out who is responsible.   Due to crowding, we now have more than half of our General Chemistry students sharing lockers. This arrangement causes as many problems as it solves.   There is no way to solve the problem without new facilities.

In the long term (7 years?), the Las Positas College Master Plan of 2018 set out a plan that included 6-7 new chemistry laboratory classrooms to replace the three that we currently occupy. We hope that this will be enough.   We did not accurately forecast the rate of growth last time we expanded and are suffering because of this.

In the short term, we will schedule classes as close together as possible to allow changeover and time for the lab technicians to clean up and prepare for the next lab.   In the fall of 2019, we have already reached this limit in 1802, with classes from 7:30am to 10pm four days per week. We will continue to deal with the problems of sharing lockers. The other lab classrooms, 1805 and 1807, have limited locker space and it is difficult to put more classes into these room. Lockers are already shared for all sections of 30A, 31, and 30B. We cannot share lockers in 12A/12B because students store multiple intermediate products in their drawers for multiple lab periods.   General Chemistry is our biggest demand for growth, but we do not have the equipment needed in 1805 or 1807 to accommodate the curriculum needs of these classes.

Other solutions might include renting portable laboratory facilities to be installed nearby. It the past, we were told this was cost prohibitive. We will probably have to eventually cap the growth in our entire STEM program due to poor decisions made under Measure B.

Coordinator Position: The Coordinator Position received an increase in CAH allocation from 0.7 to 1.0. This is still ridiculously small considering the amount of time required 12 months per year for the position. The Chemistry Department requests an increase to 4.0 CAH. In reality, there is

easily 10-15 hours per week of time spent on the position, including summer, which is not compensated.

The Coordinator duties have increased in the last several years including interviewing, hiring, and coordinating of part-time faculty, and classified personnel, SLO coordination, increased lab instrumentation, and many more students served with 60-70% increase in number of sections since 2012. With cuts to the supply budget, the coordinator needs to request funds for maintaining, replacing, and acquiring new lab equipment on a continuous basis through IER Requests that take a year to plan, write and fulfill. The coordinator needs to request new full time and classified staff for an average of 3-4 years before these requests become emergencies that are actually fulfilled. Requests for expanded facilities take countless hours over decades. Last year, we lost six part-time faculty and a third of our full time faculty and it fall on the coordinator to beg for replacements, hire new faculty, train and mentor them.

Web Accessibility: The department needs greater institutional support to ensure that all online course content (e.g., in Canvas) are web accessible. As a department, we have a tremendous amount of content on Canvas and more on our department website. Updating lab manuals, safety materials, and lecture notes to meet accessibility standards requires significant time. We have only begun to access the accessibility of this content.

Pedagogy needs: Our laboratory curriculum needs updating to improve the quality of the course content, reduce environmental waste, and minimize the cost of materials. We have gradually made small changes, but with less than 50% of our classes taught by full time faculty and lab supply funding being cut, large changes are difficult to research and implement. This has a significant impact on students and the environment.

We still need to create a non-major's course to support science GE requirements for our students such as Environmental Chemistry, Chemistry and Society, or Brewing Chemistry. However, this would eat into our already insufficient FTEF allocation and compete with other GE science courses on campus, so it has been a low priority.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW		
	Community Partnerships/Outreach	X	Facilities, Supplies and Equipment, Software	LPC Planning Priorities	X	Services to Students
X	Course Offerings		Financial/Budgetary	LPC Collaborations	X	SLO/SAO Process
	Curriculum Committee Items	X	Human Resources	X Pedagogy		Student Equity
	External Factors		Learning Support	Professional Development	X	Technology Use

F. Challenges, Obstacles and Needs: Describe any significant challenges, obstacles or needs for your program. Please highlight any negative impacts for students.

In order to continue to grow and to accommodate an increasingly packed schedule in our laboratories, Chemistry will need to continue to increase our laboratory technician support staff. We already have difficult periods of the day where lab staff are stretched between the two buildings with short turnover

times. With this in mind, we will be requesting a part-time, 10-month Lab Technician through the Classified and Administrative Position Request process.

Also see section E.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW			
	Community Partnerships/Outreach		Facilities, Supplies and Equipment, Software		LPC Planning Priorities		Services to Students
	Course Offerings		Financial/Budgetary		LPC Collaborations		SLO/SAO Process
	Curriculum Committee Items	X	Human Resources		Pedagogy		Student Equity
	External Factors		Learning Support		Professional Development		Technology Use

G. Short Term Planning: What are your most important plans (either new or continuing) for next year? Describe plans starting now and continuing through AY 20-21.

The following are our most urgent plans for 2020-21:

-Update Program Review
-Update all seven Course Outlines in Chemistry
-Request an additional Full time Faculty in Chemistry
-Request a Part-Time/10 month lab technician for evenings.
-Request Updated Periodic Tables, Lab Jacks, and distillation columns for our classrooms through IER.
-Update the Chemistry Website
-Get the GCMS operational again.
-Update laboratory curriculum.
-Continue serving students through instructor office hours in the Tutorial Center
-Continue successfully placing students in internships at Sandia, LLNL, LBL, and local companies.

Mark an X before each area that is addressed in your response.				Definitions of terms: https://bit.ly/2LqPxOW			
X	Community Partnerships/Outreach	X	Facilities, Supplies and Equipment, Software		LPC Planning Priorities	X	Services to Students
	Course Offerings	X	Financial/Budgetary		LPC Collaborations	X	SLO/SAO Process
X	Curriculum Committee Items	X	Human Resources	X	Pedagogy		Student Equity
	External Factors	X	Learning Support		Professional Development	X	Technology Use

H. Long Term Planning (Optional): Please detail any long-term plans for the next 3-5 years. (Only if you have significant plans, such as implementation of a grant project, creation of long-term initiatives including those using restricted funds such as Equity or SSSP, construction and outfitting of a new building).

In 3-5 years, the Chemistry Program will hopefully begin the planning process for a new science building with our STEAM colleagues.

Mark an X before to each area that is addressed in your response.			Definitions of terms: https://bit.ly/2LqPxOW		
	Community Partnerships/Outreach	x	Facilities, Supplies and Equipment, Software		LPC Planning Priorities		Services to Students
	Course Offerings		Financial/Budgetary		LPC Collaborations		SLO/SAO Process
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Section Two: Current Topics (Required for All Programs)

A. **Program-Set Standard (Instructional Programs Only): The program-set standard is a baseline that alerts programs if their student success rates have dipped suddenly. There may be many valid reasons a program does not meet the Program Set Standard; when a program does not meet this standard, they are simply asked to examine possible reasons and note any actions that should be taken, if appropriate.**

   Program-set standard data can be found on this page:
   http://www.laspositascollege.edu/research/outcomes.php

   (Data for AY 18-19 will be available by the beginning of Fall 2019).

   Did your program meet its program-set standard for successful course completion?
   __X__yes _____no

   If your program did not meet your program-set standard, discuss possible reasons and how this may affect program planning or resource requests.

B. **SLOs/SAOs: Describe an example of how your program used course SLO data (SLOs) or SAO data from last year (2018-19) to impact student learning, access, achievement, or other services to students. (Copy the box below if you would like to discuss multiple examples).**

Course (SLOs only):
SLO or SAO:
Describe the quantitative or qualitative results:
Discuss any actions taken so far (and results, if known):
Discuss your action plan for the future:

C. **Program SLOs (Degree/Certificate granting programs only**): Describe an example of how your program used program-level SLO data (PSLOs) from last year (2018-19) to impact student learning or achievement. (Copy the box below if you would like to discuss multiple examples).

Degree/Certificate: Chemistry

Program SLO: Students completing the Chemistry Degree should be able to demonstrate proficiency in solving complex problems and conceptual understanding of content listed on the course outline as measured by the American Chemical Society Exams.
Describe the quantitative or qualitative results: Our class averages have consistently been above the national averages as measured by the ACS Exams.
Discuss any actions taken so far (and results, if known): ACS tests have been administered and some faculty have entered the data in eLumen.
Discuss your action plan for the future: We will meet with the Program Review Leadership and update our plan for the future.

D1. SLO/SAO Progress Review: To see if your program is up to date with the creation of SLO/SAOs, please consult the list available here: https://bit.ly/2LggoKv. List any courses or services areas that do not have SLOs or SAOs approved. These SLOs/SAOs need to be submitted to eLumen by November 18 to become active for Spring 2020; please work with your SLO/SAO coordinator.

All of our courses have approved SLO's.

D2. This question has been removed.

D3. This question has been removed.

E. This question has been removed.

F. Student-Centered Funding Formula (SCFF): The state funding allocation model has shifted to include socio-economic status and student achievement metrics. LPC will begin to be funded by this model by AY 21-22. The district and college are using this opportunity to develop projects that support these funding considerations and the needs of our students. The projects should help LPC achieve the goals listed below.

Goals for SCFF Projects
- Ensuring eligible students receive financial aid, if desired   - Removing barriers that hinder students from moving toward their goals   - Offering additional information and support about educational pathways   - Offering academic support that increases English/math completion in the first year   - Enhancing career readiness through coursework   - Increasing completion of degrees and certificates   - Increasing transfers and transfer readiness

F1. SCFF Actions Taken: Describe one initiative or action your program or area has taken in support of one of the goals in the list above.

- **What was the action?**
- **What was the result, if known?**
- **If your action or initiative was successful, please explain why and whether it could be used in other areas or scaled for use across the campus.**
- **If your action or initiative was not successful, please indicate why (lack of resources, unforeseen variables, etc.)**
- **If you did not take any actions in support of the goals above, you may write "N/A."**

1. We have continue to offer at least 10 hours per week of office hours by Faculty in the Tutorial Center in order to continue to help students who need our support in reaching their goals.
2. Professor Russell Jensen has written a proposal to subsidize funding for the ACE train for students coming from the Central Valley. This would remove barriers from students moving towards their goals and hopefully increase the completion of degrees, certificates, and transfers. The proposal is in the early stages and we don't know if there will be funding or if it will be successful.

F2.

Future Strategies (optional): Please describe any possible strategies or actions that your program or the college could use to support the goals listed above. What resources would be needed?

G. Student Equity and Achievement Program: To ensure equitable outcomes for vulnerable student populations, Las Positas College plans to close equity gaps in the areas listed below. For each area/metric, the listed impacted groups have had proportionately lower rates than other groups.*

Area/Metric	Impacted Groups
Access: Enrollment at LPC	Black or African American (Female), Black or African American (Male), Filipino (Female), White (Female)
Readiness: Completion of both transfer-level Math & English	American Indian or Alaska Native (Female), Black or African American (Female), Black or African American (Male), Hispanic or Latino (Male/All), First Generation (Male/All), Foster Youth (Female), Foster Youth (Male), LGBT (All)
Retention: Retention from Fall to Spring	Black or African American (Female/All), First Generation (Female/All), Foster Youth (Male)

Completion: Completion of an Associate Degree, Certificate	American Indian or Alaska Native (Male/All), Asian (Male), Black or African American (Male/All), Native Hawaiian or other Pacific Islander (Female), Native Hawaiian or other Pacific Islander (Male), Foster Youth (Male), LGBT (Female), LGBT (Male)
Completion: Transfer to a Four-Year Institution	Disabled (Male/All), Black or African American (Female), Hispanic or Latino (Male), Native Hawaiian or other Pacific Islander (Female), Native Hawaiian or other Pacific Islander (Male), First Generation (Female), Foster Youth (Male), LGBT (Female)

*The full list of impacted groups with supporting data can be found here: https://bit.ly/2XZVGDb

G1. Equity Actions: Describe any actions your program has taken in the past two years (2017-2019) or actions currently in progress to improve the metrics above for the impacted groups listed (for example, to increase the ability for African American students to enroll in classes at LPC, or to increase the ability of LGBT students to complete Associate's Degrees or Certificates). What has been the effect of these actions, if known?

We have helped students individually in classes and through the Tutorial Center Office Hours.

G2. Equity Challenges: Describe any challenges your program has faced in promoting equity and equity-based decision making in the metrics listed above (or any other areas).

Our program is increasingly diverse, we welcome this and any way to help our students succeed.

H. Program Review Suggestions (optional): What questions or suggestions do you have regarding the Program Review forms or process?

None

Section Three: Curriculum Review

(Programs with Courses Only)

The following questions ask you to review your program's curriculum. To see the last outline revision date and revision due date:

> **1. Log in to CurricUNET**
> **2. Select "Course Outline Report" under "Reports/Interfaces"**
> **3. Select the report as an Excel file or as HTML**

Curriculum Updates

A. Title V Updates: Are any of your courses requiring an update to stay within the 5 year cycle? List courses needing updates below.

Chemistry 1A, 1B, 12A, 12B, 31, 30A, and 30B all require updating by May 2020.

B. Degree/Certificate Updates: Are any degrees/certificates requiring an update to do changes to courses (title, units) or addition/deactivation of courses? List needed changes below.

No, our degrees were updated in 2018.

C. DE Courses/Degrees/Certificates: Detail your department's plans, if any, for adding DE courses, degrees, and/or certificates. For new DE degrees and/or certificates (those offered completely online), please include a brief rationale as to why the degree/certificate will be offered online.

Not Applicable.

Section Four: CTE Updates
(CTE Programs Only)

A. Labor Market Conditions: Examine your most recent labor market data. Does your program continue to meet a documented labor market demand? Does this program represent a training need that is not duplicated in the college's service area? (Please note: your labor market data should be current within two years. Contact Vicki Shipman or the current CTE Project Manager for access to data).

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B. Advisory Boards: Has your program complied with advisory board recommendations? If not, please explain.

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C. Strong Workforce Program Metrics: Utilizing LaunchBoard, review the Strong Workforce Program Metrics. Review the data and then answer the following questions.

(Contact Vicki Shipman or the current CTE Project Manager for help accessing the data).

C1. Does your program meet or exceed the regional and state medians **for increased enrollments, completions, and/or transfer since your last program review**? If not, what program improvements may be made to increase this metric?

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C2. Does your program meet or exceed the regional and state medians **for students gaining employment in their field of study**? If not, what program improvements may be made to increase this metric?

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C3. Does your program meet or exceed the regional and state medians **for student employment rates after leaving the college**? If not, what program improvements may be made to increase this metric?

C4. Does your program meet or exceed the regional and state medians **for increased student earnings and median change in earnings?** If not, what program improvements may be made to increase this metric?