



Program Review

Purpose

“Program review is the process through which constituencies (not only faculty) on campus take stock of their successes and shortcomings and seek to identify ways in which they can meet their goals more effectively. It is important to note here that the task of identifying evidence-based successful practices, and sharing these practices college-wide, is far more important than the negative perspective of trying to ferret out ineffective practices” – Academic Senate for California Community Colleges

Data Driven Decision Making

*Continual improvement
Evaluation of program resource needs
Fiscal stewardship and transparency
Culture of evidence*

Reporting Cycle

Program Review will be conducted every two years beginning Fall semester 2021.

Reporting Cycle Activities	Timeline
Program Review forms posted on the Program Review website :	August 22, 2023
Data is available on the ORPIE website:	
<ul style="list-style-type: none"> Instructional Program Review Dashboard 	Available now
<ul style="list-style-type: none"> Student Services Program Review Dashboard 	Coming August 28, 2023
<ul style="list-style-type: none"> State comparison data may be found on Data Mart or Cal-Pass Plus 	Available now
Program Review Office Hours and Data Support offered in a hybrid format in the Language Arts (LA) Room 115 and by zoom.	See the Program Review website schedule information.
Program Review draft due via Dynamic Forms.	Friday, October 6, 2023
Review and Feedback Steps to Finalize Program Review:	
<ul style="list-style-type: none"> Step 1a: Technical Review by IEC (for all) and Academic Senate (for any that include a faculty request). See the technical review rubrics. 	Friday, October 6, 2023
<ul style="list-style-type: none"> Step 1b: Content Review by Deans/Director. Feedback due to author. 	Friday, October 6, 2023
<ul style="list-style-type: none"> Step 2: Completed Revisions submitted by author for final approvals by Deans/Manager and Vice Presidents. Final draft will address technical and content review feedback. 	Friday, November 3, 2023
<ul style="list-style-type: none"> Step 3: Final Program Review Approvals by Deans/ Manager, Vice Presidents, and IEC. ORPIE will post final draft to the website. 	Friday, December 1, 2023
<ul style="list-style-type: none"> Step 4: Funding Requests proceed through governance structure. 	
<ul style="list-style-type: none"> Depending on the request either the Vice President or the IEC will assign the Program Review to the appropriate committee(s), including Planning Council for prioritization. 	Friday, December 1, 2023
<ul style="list-style-type: none"> Committees forward recommendations to the Budget Committee 	Friday, December 1, 2023

• Faculty Hiring timeline:	
• Academic Senate Q&A	Tuesday, November 14, 2023
• Senator Ratings due	Friday, November 17, 2023
• Academic Senate – Special Meeting to Review Rankings	Tuesday, November 28, 2023
• Prioritized requests for faculty positions will be provided by the Academic Senate to the Executive Team	Wednesday, November 29, 2023
<ul style="list-style-type: none"> President makes final faculty decisions and reports to Senate at Special Meeting. Based on approved faculty positions, faculty submit search committee membership and supplemental questions to HR and the Academic Senate. 	Tuesday, December 5, 2023
• Hiring committee participants appointed by the Academic Senate.	Tuesday, December 12, 2023
• The Budget Committee forwards all recommended non-faculty requests to the Executive Committee	Tuesday, December 12, 2023
• President announces all funded recommendations campus-wide	Monday, April 1, 2024

AUTHOR INFORMATION

Employee ID (E# or C#): First Name Last Name
Wing Email Address Office Phone

Dean/Manager First Name Last Name Email
Vice President First Name Last Name Email

Program Review - Draft
*Program-Review-Instruction-Physics.docx

Program Review - Final
Submission
*Program-Review-Instruction-Physics-FinalVersion.docx

This Program Review includes the following:

Pick all that apply.
Faculty Request

Facilities, Technology, Equipment Request

Classified Request

This Program Review includes the following:

Pick all that apply.
Faculty Request

Facilities, Technology, Equipment Request

Classified Request

Faculty Requests (up to 3)
One upload per request

Faculty Upload1
Faculty Upload2
Faculty Upload3

Faculty Requests (up to 3)
One upload per request

Faculty Upload1
Faculty Upload2
Faculty Upload3

Facilities, Technology or Equipment Draft Requests (up to 5)

FTE Upload1
FTE Upload2
FTE Upload3

Facilities, Technology or Equipment Update Requests (up to 5)

FTE Upload1
FTE Upload2
FTE Upload3

FTE Upload4
FTE Upload5

FTE Upload4
FTE Upload5

Classified Personnel Draft Requests (up to 3)
One upload per request

Classified Upload1
Classified Upload2
Classified Upload3

Classified Personnel Updated Requests (up to 3)
One upload per request

Classified Upload1
Classified Upload2
Classified Upload3

Supporting Materials (Optional)

Upload1
Upload2
Upload3

Supporting Materials (Optional)

Upload1
Upload2
Upload3

...3838333930

James Almy

Author - Draft Signature

10/06/2023

Date

...3531323932

James Almy

Author - Final Signature

10/23/2023

Date

Dean/Manager Draft Feedback

No Concerns. Please see email about the FTES/FTEF ratio numbers for this submission.

Thank you for all your work on this program review.

FileUpload2

IEC Feedback

- DEIA program support: The equity squad was last active in 2020, that's before the last PR cycle. I recommend that more recent work be discussed in greater detail.
- Department collaborations: Not entirely clear how counseling fits into this. Is it a collaboration with the counseling department? Also, a collaboration with the math department should be considered since math skills was highlighted as a challenge.
- The current Goal 1 metric measurement: Be specific about what you will track, i.e., what does achievement gap mean for your department.

FileUpload4

Program Review Rubric Upload

Academic Senate Executive Board Feedback

FileUpload1

Program Review Rubric Upload

Dean/Manager Final Feedback

FileUpload2

...323333138

Danny Johnson

11/13/2023

Dean/Manager Signature

Date

Vice President Feedback

FileUpload3

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Kay Nguyen

12/05/2023

Vice President Signature

Date

Downloaded to the following Committee Teams folder on:

...3934343139

Lauren Davis Losenko

12/11/2023

IEC Signature

Date

Dean/Manager -
Feedback Signature

Electronically signed by Danny Johnson on 10/17/2023 2:23:11 PM

Academic Senate:
Technical Review
Signature

Signature not required

Academic Senate
Signature

Signature not required

IEC: Technical Review
Signature

Electronically signed by Jeannette Jaramillo Hernandez on 10/20/2023 4:42:46 PM



Program Review Request Instruction

Program Review Purpose

“Program review is the process through which constituencies (not only faculty) on campus take stock of their successes and shortcomings and seek to identify ways in which they can meet their goals more effectively. It is important to note here that the task of identifying evidence-based successful practices, and sharing these practices college-wide, is far more important than the negative perspective of trying to ferret out ineffective practices” –Academic Senate for California Community Colleges, 2009

SUBMITTER INFORMATION

First Name:	James
Last Name:	Almy
Email:	jalmy@gwc.cccd.edu
ID:	
Phone Number:	Ext 52150
Who is your Dean/Supervisor?	Danny Johnson
Are you the Department Chair?	Yes

GENERAL PROGRAM QUESTIONS

Name of Program (Academic Programs should be listed per discipline):
Physics

Please provide a brief description and any significant change in your program since the last Program Review cycle.
<p>The Physics program prepares students for further study in physics or related physical science disciplines. It also provides a background in physics that includes skills appropriate for entry-level employment in science-related industries or laboratories. Coursework includes instruction in all of the main areas of classical physics, exposure to some of the more modern concepts of physics, and prepares students to think critically and apply reasoning skills to analyze real world situations.</p> <p>The Covid-19 pandemic induced shift to remote instruction is now behind us and all of the lab courses are being taught in-person, enabling hands-on lab skills to be acquired by our students. This resumption of in-person instruction has returned the quality of our course offerings to their previous pre-pandemic level.</p> <p>However, remote instruction has not been entirely abandoned. A small number of physics lectures are being taught in an asynchronous online manner.</p>



Program Review Request Instruction

The full-time faculty member of the program is the advisor for the newly instituted Physics Club.

What are your program's strengths? (Answers could include but not limited to KPI data)

The physics courses offered by our department range from those capable of meeting the needs of non-science majors to those required of students majoring in chemistry, geology, physics, engineering, biology, and health careers. We pride ourselves on our rigorous courses that well prepare students for the next course in the sequence or in their major. We reach all of these students with a limited number of full-time faculty. Members of the faculty and staff work well in a collegial atmosphere, with full-time faculty mentoring and supporting the part-time faculty. Our students consistently transfer to CSU and UC campuses, are awarded scholarships and internships, and continue on to professional or graduate programs in their fields.

What are the challenges for your program? (If there are regulations or requirements for your program that require additional support, please note those here)

Hispanic/Latinx students continue to be the largest disproportionately impacted group.

Student math skills are less than instructors expect, causing instructors to spend physics class time remediating math skills.

Many students lack the everyday experiences that are assumed for typical physics problems. Many physics word problems are given in the context of some activity, such as driving or baseball. It's assumed that students have a basic understanding of these activities. Faculty are learning that they lack such basic understanding of these activities, necessitating changes in instruction.

Describe any trends and contributing factors related to enrollment, retention, and success for this past cycle.

Success rates have generally increased over the past five years. Enrollment in physics courses steadily increased from the 2017-2018 year through 2020-2021, only to decrease dramatically during the 2021-2022 year. The reason for this decrease in enrollment is unknown. Enrollment then increased meaningfully in 2022-2023. Retention rates have generally increased over the past five years.

How does your department/program support the goals of diversity, equity, inclusion, and accessibility? (Answers could include but not limited to gaps in success data, modality of course offerings, part/length of term (full-term, non full-term, etc.)

One of the program's goals for the previous program review cycle was the reduction of the achievement gap observed in student success rates for Hispanic/Latinx students, the largest of our disproportionately impacted groups. In that previous program review we stated that we would seek advice from the Equity Squad on how we can reduce the achievement gaps observed in our courses and pursue professional development activities in order to learn relevant instructional techniques. Both of these actions were taken. We asked for advice from the Equity Squad on ways to



Program Review Request Instruction

address these equity gaps and all full-time faculty in the program completed one or more professional development activities related to equitable teaching practices. These professional development activities have led to changes in instruction.

A small number of physics lectures are being taught in an asynchronous online manner.

How does your department/program collaborate with other areas on campus to advance student success?

The program has communicated the decision to begin offering Conceptual Physics Lab (PHYS G111) on a once-a-year basis to the Counseling department.

How does your department/program utilize technology to support student success?

Technology is used extensively by the Physics program. The classroom projectors and speakers are used for PowerPoint and video presentations. Canvas sites are used to disseminate course materials and announcements, for their gradebook capabilities, and for the assessment of students via quizzes. Most classes make video recordings of lectures available to students. Simulations are extensively used for instruction, especially in the labs. Excel is used for the construction of graphs and statistical analysis of data. Laboratory equipment used to provide students with hands-on exposure to the sorts of sophisticated instrumentation that modern physics relies on for its application.

Do any of the courses in your program have a CTE TOP code?

No

AWARDS

What type of awards does your program offer?

- Certificates
- Associate Degree
- Associate Degree for Transfer

Please provide the information for the number of awards for Associate Degrees (CCI-approved), Associate Degrees for Transfer (State-approved), and Certificates of Achievement for this program. Please put N/A if an area is not applicable for your program.

	3 years ago	2 years ago	1 year ago
Certificates	NA	NA	NA
Associate Degrees	25	17	10
Associate Degrees for Transfer	16	10	10



Program Review Request Instruction

Please comment on the trends for the number of awards. You may then comment on any other relevant information provided by the Office of Research and Planning, and Institutional Effectiveness (ORPIE).

The number of degrees in physics has generally decreased over the last three years. The large decrease in physics course enrollment that occurred two years ago is likely responsible for this decrease in degrees awarded.

FTES and FTEF

For the below questions, please provide your FTES (full-time-equivalent students, resident) divided by your FTEF (full-time-equivalent faculty). Please submit your rates from three years ago, two years ago, and this past year.

Please note: For programs with earned credit please use FTES (Res)/FTEF. For non-credit, please use FTES (Total)/FTEF.

	3 years ago	2 years ago	1 year ago (this past year)
FTES/FTEF Ratio:	1.21	0.81	0.96

Outside of hiring new faculty or staff, please discuss the data trends above, and your plans for serving more students.

The efficiency of our offerings generally decreased. This is a consequence of an unexpected reduction in enrollment two years ago.

The Conceptual Physics Lab (PHYS G111) has been under-enrolled for a few years and so it was decided to reduce this course to a once-a-year offering for the foreseeable future.

CURRICULUM

After a thorough review of your courses in CurricUnet, with the assistance of your CCI representative, answer the following questions.

If you do not currently have a representative on CCI, you may contact either:

Gary Kirby: gkirbyjr@gwc.cccd.edu

Monica Jovanovich: mjovanovich@gwc.cccd.edu

Do you have any courses that have not been updated to CCI, within the required timeframe (6 or more years for a transfer-level course, 3 years or more for a CTE course)?

- Yes
- No



Program Review Request Instruction

Are there courses in your Program (Degree/Certificate) that have not been successfully offered since the last Program Review? Please note, classes that were cancelled, they were not successfully offered)

- Yes
 No

Do you have active courses that are not part of a degree or certificate?

- Yes
 No

Please indicate the name of the course(s) and the name(s) of the certificate(s) or degree(s) you intend to connect it to when you submit your revision to CCI.

NA

STUDENT LEARNING OUTCOMES

Do any of your SLOs use the exact wording as the course objectives?

(SLOs should be written to reflect the course objectives while not using the exact same language as the course objectives).

- Yes
 No

How has your department/program utilized SLO (Student Learning Outcome) results to make changes or improvements to your Program?

Students were found to be less than satisfactorily capable at solving problems involving Newton's Laws using calculus. Students needed more practice solving challenging problems both inside and outside the classroom. During lab, a certain amount of time was dedicated to having students work on solving challenging problems. Students work on these problems in groups with the instructor present for help.

GOALS AND REQUESTS FOR FUNDING

Requests – If you are requesting any of the following, they MUST be addressed within your Department goals. These forms must be submitted separately from the Program Review.

- Faculty
- Facilities, Equipment, Technology & Other
- Classified Personnel



Program Review Request Instruction

GWC Strategic Plan Goals Legend

1. **Enrollment:** GWC will increase credit and noncredit enrollment while providing efficient academic programs and student services.
2. **Equity and Success:** GWC will support, enhance, and develop equity-minded services and academic programs that lead to student success.
3. **Completion:** GWC will ensure students' timely completion of degrees and certificates by providing high quality academic programs and student services.
4. **Workforce Preparation:** GWC will support student success by developing and offering academic programs and student services that maximize career opportunities.
5. **Facilities:** GWC will provide flexible, accessible, and sustainable learning environments that support the success of students, faculty, staff, and communities.
6. **Professional Development:** GWC will support the success of all employees by providing professional development opportunities that focus on the achievement of the College Goals.
7. **Communication:** GWC will effectively communicate and collaborate within the College and its communities.

GOALS FROM PREVIOUS PROGRAM REVIEW CYCLE

Please refer to your previous Program Review cycle and summarize all outcomes for each goal.

Summary and Outcomes of Previous Goals (from the last Program Review) including resource requests and if they were funded or not.

The Physics program had five goals for the previous program review cycle:

1. Improve our outreach activities.

While we have contacted the College outreach specialist regarding creating informational brochures describing our program and organizing on-campus outreach events, we've been unable to coordinate our schedules in order to accomplish anything substantive. We also planned to develop sets of science demonstrations for various age groups, but this work was meant to supplement on-campus outreach events and since no on-campus outreach events for various age groups were held, no progress on this was accomplished. Another aspect of our outreach work was the goal of identifying professional scientists, ideally individuals whose race, ethnicity, or special population status matches that of the groups we serve who are experiencing a disproportionate impact, willing to talk about their work on campus. This was accomplished, with our department partnering with the STEM Center to host speakers. The number of current and potential students who attended these outreach events was significant, as was their satisfaction with each event. However, the number of students enrolled in physics courses has not increased as a result. One last action taken regarding this goal was the outfitting of the third-floor Math & Science display cases with items that better share the excitement and wonder that chemistry, physics, and astronomy can inspire. By better sharing the excitement and wonder of these programs, we hope to attract more student interest in them. This goal has been partially achieved.



Program Review Request Instruction

2. Modernize the physics lab curriculum.

Our requests to equipment from PASCO Scientific for the physics teaching labs was approved. These acquisitions led to four labs being modernized during the previous program review cycle. This goal was met.

3. Secure the quality of our stockroom operations.

A night stockroom manager was hired, dramatically decreasing the likelihood of turnover in this position. This goal has been met.

4. Reduce the achievement gap observed in student success rates for Hispanic/Latinx students, the largest of our disproportionately impacted groups.

The Equity Squad had no advice for us regarding reducing our equity gaps. All full-time faculty in the program completed one or more professional development activities related to equitable teaching practices. These professional development activities have led to changes in instruction. A significant reduction in the achievement gap for Hispanic/Latinx students was observed for the 2022-2023 year. A result to be happy about. However, it's only one year of decreases. Moreover, while smaller, the equity gap is still significant. This goal has been partially accomplished.

5. Establish one or more partnerships with local businesses so that these local businesses see our students as their first choice for internships and jobs.

Little formal progress was made on this goal, mainly because the champion of this goal was a part-time faculty member who no longer works at GWC. Informally, however, several of our students have found positions with AQMD, a result of one of our faculty having a personal relationship with an AQMD employee. This goal has not been achieved.

GOALS FOR CURRENT PROGRAM REVIEW CYCLE

Current goals should be connected to GWC's Strategic Plan Goals.

GOAL 1 (Required)

Description of goal:

Reduce the achievement gap observed in student success rates for Hispanic/Latinx students, the largest of our disproportionately impacted groups.

What actions will be taken to accomplish the goal?

We will continue pursuing professional development activities in order to learn relevant instructional techniques.



Program Review Request Instruction

What metric will you use to measure your goal?

We will look for a reduction in the achievement gaps experienced by Hispanic/Latinx students. Specifically, we will look for reductions in the success rate percentage point gap (PPG) for Hispanic/Latinx students. The PPG compares the percentage in a particular outcome for a disaggregated subgroup to the percentage for all students.

Which of the College's missions and goals does this goal support? (check all that apply)

- Enrollment
- Equity and Success
- Completion
- Workforce Preparation
- Facilities
- Professional Development
- Communication

GOAL 2 (Required)

Description of goal:

Continue the modernization of the physics lab curriculum.

What actions will be taken to accomplish the goal?

Old lab exercises will continue to be replaced with new ones that utilize the recently acquired PASCO Scientific equipment.

What metric will you use to measure your goal?

The replacement of three or more lab exercises will be considered a success.

Which of the College's missions and goals does this goal support? (check all that apply)

- Enrollment
- Equity and Success
- Completion
- Workforce Preparation
- Facilities
- Professional Development
- Communication

GOAL 3 (Required)

Description of goal:

Improve the efficiency and organization of the stockroom.



Program Review Request Instruction

What actions will be taken to accomplish the goal?

The procedures used to prepare items necessary for experiments will be reviewed for their accuracy, ease of editing, and ability to be backed-up. The manner in which lab equipment is stored will be reviewed.

What metric will you use to measure your goal?

Instructor satisfaction with the changes will be surveyed.

Which of the College's missions and goals does this goal support? (check all that apply)

- Enrollment
- Equity and Success
- Completion
- Workforce Preparation
- Facilities
- Professional Development
- Communication

OTHER INFORMATION

What additional information would you like to share about your program?

All of our programs equipment requests from the previous program review were granted. We're grateful for the College's confidence in us and hope that we're repayed that confidency by being trusted stewards of these resources.

Submitter's Signature: Click or tap here to enter text.

Date: Click or tap to enter a date.

Supervisor's Review

As the supervisor of this program, I have reviewed this request.

- No concerns
- I have concerns

Comments: Click or tap here to enter text.

Supervisor's Signature: Click or tap here to enter text.

Date: Click or tap to enter a date.

Vice President's Signature: Click or tap here to enter text.

Date: Click or tap to enter a date.



Program Review Request Instruction