

Science and Engineering Department
AUP for Academic Year 2019-2020
October 2018

Describe Department/Unit

Connection to College Mission

The mission of the Science and Engineering Department is to provide the rigorous science and engineering foundation necessary for students to achieve the skills, knowledge, intellectual curiosity, and scientific literacy essential for a wide range of professional, technical and academic careers. For students pursuing careers outside of science, an understanding of the processes and an appreciation for science is provided. The department mission supports the mission of the district and college by striving to provide excellent educational programs, services, and opportunities for transfer and CTE students.

Report on Improvements Made and Gaps Identified in the Prior Year

Student Equity: Actions Taken

Student Equity: Gaps to be Addressed

Gender: Male

Gap Identified:

Gender: **Male** Gap Identified:

During the 2017-18 academic year, male students were underrepresented in:

Biology:

37% Male versus 63% Female

Note that this gender gap mirrors Cerro Coso Community College's collegewide gender gap of 42% male students versus 57% female students.

Despite this gender gap, it is not reflected in the subject area's success and retention data. Biology's 5-year average retention rate data, when broken down by gender, is 87% retention for male students and 86% retention for female students. Similarly, Biology's 5-year average success rate data, when broken down by gender, is 69% success for male students and 71% success for female students.

Age: 40 or older

Gap Identified:

Age Group: **Age 40 or Over** Gap Identified:

During the 2017-18 academic year, students Age 40 or Over were underrepresented in:

Biology

10% of the students enrolled in Biology courses were in the population Age 40 or Over. Under representation in this age group is similarly low over the past 5 academic years. For comparison, students Age 40 or Over represented 19% of the collegewide student

population during the 2017-2018 academic year.

Ethnicity: African American

Gap Identified:

Ethnicity: **African American** Gap Identified:

African American students achieved a low success rate in:

Biology

Biology's 5-year average success rate for African American students is 46%. This low success rate is slightly lower than Cerro Coso Community College's collegewide success rate for African American students, which is 54%.

Conversely, Biology's 5-year average retention rate for African American students is 83%. This retention rate is higher than Cerro Coso Community College's collegewide retention rate for African American students, which is 76%. Therefore, the data indicate that, while African American students are retained in Biology, they graduate from Biology at low rates of success.

Gender: Male

Gap Identified:

Gender: **Male** Gap Identified:

During the 2017-18 academic year, male students were underrepresented in:

Chemistry:

33% Male versus 67% Female

Note that this gender gap mirrors Cerro Coso Community College's collegewide gender gap of 42% male students versus 57% female students.

Despite this gender gap, it is not reflected in the subject area's success and retention data. Chemistry's 5-year average retention rate data, when broken down by gender, is 94% retention for male students and 94% retention for female students. Similarly, Chemistry's 5-year average success rate data, when broken down by gender, is 89% success for male students and 91% success for female students.

Age: 40 or older

Gap Identified:

Age Group: **Age 40 or Over** Gap Identified:

During the 2017-18 academic year, students Age 40 or Over were underrepresented in:

Chemistry

7% of the students enrolled in Chemistry courses were in the population Age 40 or Over. Under representation in this age group is similarly low over the past 5 academic years. For comparison, students Age 40 or Over represented 19% of the collegewide student population during the 2017-2018 academic year.

Age: 30 to 39 years

Gap Identified:

Age Group: **Age 30-39** Gap Identified:

During the 2017-18 academic year, students Age 30-39 were underrepresented in:

Chemistry

10% of the students enrolled in Chemistry courses were in the population Age 30-39. Under representation in this age group is similarly low over the past 5 academic years. For comparison, students Age 30-39 represented 20% of the collegewide student population during the 2017-2018 academic year.

Gender: Female

Gap Identified:

Gender: **Female** Gap Identified:

During the 2017-18 academic year, female students were underrepresented in:

Physics:

36% Female versus 64% Male

Of the 28 students enrolled in Physics courses, 10 were female students and 18 were male students. Despite this gender gap, it is not reflected in the subject area's success and retention data. Physics' 5-year average retention rate data, when broken down by gender, is 93% retention for female students and 98% retention for male students. Similarly, Physics' 5-year average success rate data, when broken down by gender, is 88% success for female students and 91% success for male students.

Age: 40 or older

Gap Identified:

Age Group: **Age 40 or Over** Gap Identified:

During the 2017-18 academic year, students Age 40 or Over were underrepresented in:

Physics

0% of the 28 students enrolled in Physics courses were in the population Age 40 or Over. Under representation in this age group is similarly low over the past 5 academic years. For comparison, students Age 40 or Over represented 19% of the collegewide student population during the 2017-2018 academic year.

Ethnicity: Hispanic

Gap Identified:

Ethnicity: **Hispanic / Latino** Gap Identified:

During the 2017-18 academic year, Hispanic / Latino students were underrepresented in:

Physics

During the 2017-18 academic year, Hispanic / Latino students represented 21% of the 28 students enrolled in Physics courses. For comparison, Hispanic / Latino students represented 41% of the collegewide student population during that same academic year.

Despite this ethnicity gap, it is not reflected in the subject area's success and retention data. Physics' 5-year average retention rate data for Hispanic / Latino students is 97%. Likewise, Physics' 5-year average success rate data for Hispanic / Latino students is 89%.

Ethnicity: African American

Gap Identified:

Ethnicity: **African American** Gap Identified:

During the 2017-18 academic year, African American students were underrepresented in:

Physics

During the 2017-18 academic year, African American students represented 0% of the 28 students enrolled in Physics courses. For comparison, African American students represented 6% of the collegewide student population during that same academic year.

Despite this ethnicity gap, it is not reflected in the subject area's success and retention data. Physics' 5-year average retention rate data for African American students is 100%. Likewise, Physics' 5-year average success rate data for African American students is 100%.

Ethnicity: African American

Gap Identified:

Ethnicity: **African American** Gap Identified:

African American students achieved a low success rate in:

Physical Science

Physical Science's 5-year average success rate for African American students is 54%. This is the same success rate as Cerro Coso Community College's collegewide success rate for African American students.

Gender: Male

Gap Identified:

Gender: **Male** Gap Identified:

During the 2017-18 academic year, male students were underrepresented in:

Geography:

37% Male versus 63% Female

Note that this gender gap mirrors Cerro Coso Community College's collegewide gender gap of 42% male students versus 57% female students.

Despite this gender gap, it is not reflected in the subject area's success and retention data. Geography's 5-year average retention rate data, when broken down by gender, is 84% retention for male students and 83% retention for female students. Similarly, Geography's 5-year average success rate data, when broken down by gender, is 67% success for male students and 74% success for female students.

Age: 40 or older

Gap Identified:

Age Group: **Age 40 or Over** Gap Identified:

During the 2017-18 academic year, students Age 40 or Over were underrepresented in:

Geography

0% of the 27 students enrolled in Geography courses were in the population Age 40 or Over.

Under representation in this age group is similarly low over the past 5 academic years. For comparison, students Age 40 or Over represented 19% of the collegewide student population during the 2017-2018 academic year.

Outcomes Assessment: Actions Taken

Outcomes Assessment: Gaps to be Addressed

Program Review: Actions Taken

General Sciences

Year of Last Program Review:

2017

Actions Taken in the Prior Year to Address Strategies:

Strategies Still to be Addressed:

Annual Planning: Actions Taken

90% SLO Evaluations

With the new eLumen system now live, assessments will be uploaded according to the assessment schedule.

Contingency Plan for a Science Modular

A contingency plan was created. With the recent reopening of the Science lab rooms in the Main Building, the contingency plan is no longer needed.

Maintain Communication with the All Sites

Communication between the different sites remains in progress and cannot be "completed".

Review of Current Year Initiatives

Reminder of Initiatives for the Current Year

Advertise and Motivate Students to Apply for STEM Scholarships

Create a Database of Students who Graduate with a Science Degree

Plan Initiatives for Next Year

Initiatives for Next Academic Year

Ensure that Online Courses Meet Accessibility Standards

Is this part of a multiyear initiative?

No

Specific Action Steps to be Taken:

Online science courses will be evaluated to ensure that they meet accessibility standards. Any areas of accessibility deficit will be fixed.

Lead Measure of Success:

As a lead measure, the Science department will need to determine the best practice(s) in evaluating online courses for accessibility.

Are any of the lead measures identified above lacking assessment instruments?

Yes

Does the department request help to develop these instruments?

Yes

Lag Measure of Success:

All online Science courses meeting accessibility standards will represent the successful completion of this initiative.

Person Responsible:

The Instructors teaching the various Online Courses and the Department Chair

It addresses a gap in student equity

Ensuring accessibility addresses the needs of students with disabilities.

Which strategic goal does this initiative address?

Goal 2: Advance Student Equity Measures, Goal 3: Ensure Student Access

Prepare for the Retirement of the Science Department's Chemistry Faculty Member

Is this part of a multiyear initiative?

Yes

Specific Action Steps to be Taken:

Within the next few years, the Science department's full time Chemistry faculty member plans to retire. Because he is the department's only full time Chemistry instructor, and has been so for numerous years, replacing his discipline knowledge and institutional knowledge will be difficult. Because of his importance in running the Chemistry program, the Science department must use his advice and assistance to ensure a smooth transition for when he retires from the college.

Lead Measure of Success:

The Science department will begin to document the faculty member's institutional knowledge pertaining to the successful running of the department's Chemistry program.

Are any of the lead measures identified above lacking assessment instruments?

No

Does the department request help to develop these instruments?

No

Lag Measure of Success:

The successful continuation of the Chemistry program upon the retirement of the department's Chemistry instructor will represent the successful conclusion of this initiative.

Person Responsible:

The Science Department Chair and the Retiring Chemistry Instructor

Other

This initiative addresses the college's current lack of a mechanism for passing down institutional knowledge to new hires.

Which strategic goal does this initiative address?

Goal 1: Maximize Student Success, Goal 5: Strengthen Organizational Effectiveness

Evaluate Resource Needs

Facilities

Information Technology

Marketing

Professional Development

Research and Data

Staffing Requests

1000 Category - Certificated Positions

-

Location:**Justification:**

2000 Category - Classified Staff

-

Location:

Salary Grade:

Number of Months:

Number of Hours per Week:

Salary Amount:

Justification: