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Instructional Program Review

General Information

1. Name of department (program) under review.

Astronomy (under the Physics Department)

2. Who is the person(s) submitting the Program Review form?

Glen White\Anca Husher

3. What is the current academic year (i.e. 2022-23)?

2022-2023

4. Please describe the department/program, its staff and faculty, etc.

Two full-time faculty members share responsibility for offering one section of ASTRO 40 each fall and spring semester. The program has access to an onsite observatory, several portable telescopes, and a portable planetarium known as the StarLab.

5. Please describe how this department's/program's mission relates to the college's [mission](#) and [strategic goals](#).

The course supports students completing a General Science award and provides an opportunity for students to explore their passions. Astronomy can be an introduction to science in general, hopefully encouraging them to take other science courses.

Department Data Sheet

1. Review the Department Summary Data Table. What are the strengths? What are the challenges or areas of improvement? What is the impact on students? Respond to a minimum of three trends such as census enrollment, FTES/FTEF, course success rate, course retention rate, etc.

Since the astronomy course falls under the Physics Department, the data are likely skewed towards Physics majors and there could be only minimal overlap with astronomy students. With nine sections offered under Physics, and two of the Astronomy, extracting data from across the department does not appear to yield relevant information. Based on the course specific data described below, enrollment, retention, and success rates are strong.

2. Review the Department Student Equity – Success Rates Data Table. What are the strengths? What are the challenges or areas of improvement? What is the impact on students?

The data are for the Physics Department as a whole, it is not known if the statistics hold for the Astronomy course as well. Regardless, the Physics Department has more females than males enrolled, but the female success rate gap is -6.6% compared with 8.6% for the males.

For ethnicity, Asian and Hispanic students show success rate gaps of 17.5% and 4.4% , respectively, while the white students show a rate of -7.0% .

The 18- to 24-year-old group represents more than half of the enrolled students and they show a success rate gap of -2.3% . The 25- to 29-year-old group shows a success rate gap of -11.2% . The 17 or younger group showed the strongest success rate at 9.0% .

Given that the data are not specific to the Astronomy course, extrapolations for challenges or successes are not practical. It does appear that the department is attracting a range of students from different age and ethnic groups, and most are successful in the program.

3. Review the Program (Department) SLO Data Table. How does your department support ISLOs? What are the strengths and challenges? What is the impact on the college mission?

In the Physics Department, four of the ISLOs are covered, and the success rate is remarkably high with all demographics reaching 90% or greater apart from white students in the knowledge category who scored 89.4% . It is not known what share of the evaluated students were in the astronomy course. Assuming there is some overlap, most students are meeting or exceeding the expectations in each ISLO.

Award Data Sheet

1. Review both tables on the Award Data Sheet. What are the strengths? What are the challenges or areas of improvement? What is the impact on students?

No awards are made for Astronomy. The course supports the General Science award and categories B1 and 5A for other award requirements. This course draws and supports students from a wide variety of study areas.

Course Data Sheet

1. Review the Course Summary Data Table for each course. What are the trends for enrollment, retention, and success rates? What are the strengths? What are the challenges or areas of improvement? What is the impact on students?

ASTRO-40 has shown strong enrollment numbers since the 2015-2016 school year, with an increasing trend. For the 2022-2023 school year enrollment was 89 students for two sections. Waitlists have been generated since the 2016-2017 school year hitting a high of 42 in the current school year for two sections offered. The average fill rate has similarly been high, hitting 111.2% for the current school year.

Both the retention and success rates are high, with the lowest results observed during the 2018-2019 school year showing 81.4% and 66.1%, respectively. The success retention and success rate for the 2021-2022 school year were 83.3% and 80.8%, respectively.

Since this course is taught entirely online, it has both strengths and challenges related to access and technology. Students from a wide region can take the course and plan their attendance as best fits their schedules. However, some technology challenges are apparent with some students either having poor connectivity, or lack of familiarity with an online learning environment. Assistance is provided wherever possible, but slow connection speeds or inadequate technology may be difficult to mitigate, particularly for students out of the immediate area.

The course supports the General Science award, and the ability to attend the course on their schedule allows them the flexibility that an in-person course would not. In this regard, students may be able to take other core classes that would otherwise conflict with a fixed schedule course.

2. Review the Student Learning Outcomes Data Table for each course. What are the strengths and challenges? What is the impact on the college mission?

The data indicate a high success rate for each of the three SLOs for the course, with 96.8% success for each in the 2021-2022 school year. These results are up substantially from the 2019-2020 school year where the values ranged from 66.7% to 75.8%. No data are available for the current school year.

Curriculum Analysis

1. What courses and awards are due for 5-year review? To find this information, go to the [Curriculum Committee webpage](#) and click on the following links in the left menu bar: Course 5 Year Review Tracker link and Award 5 Year Review Tracker link.

The course is current with no review needed for the 5-year review. No awards are made in Astronomy, so no data are provided, and no review is required.

Goal Setting

On the following pages, please establish goals for your department. Keep in mind the purpose of the Program Review to drive continuous improvement, as well as to help establish a need for funding or other support to achieve improved outcomes. **What sorts of things will the department be doing, or would like to be doing, to maintain, expand, or improve excellent instructional delivery?**

This template has space to establish up to three goals. If you wish to add more goals, additional forms are available in the Teams folder.

Goal 1

1. State the status of this goal (new, in-progress, or completed):

New (also presented in the Earth Science program review)

2. State this goal in one or two sentences?

Repair/upgrade astronomy equipment in the observatory.

3. What is a short name for this goal?

Astronomy upgrades

4. In what ways will achieving the goal support the college's mission and/or core values?

This equipment will not only support student learning but can also be used for community outreach events.

5. List the college-wide strategic goals that will be addressed by this goal (include all that apply and remove any that do not apply).

- Increase award completion
- Reduce barriers to completion
- Reduce equity gaps
- Increase transfer readiness
- Maintain institutional stability

6. What steps are you going to take to achieve this goal?

Obtain estimates to repair the large telescope and accessories.

7. How are you going to measure completion of this goal?

A fully functional mounted telescope.

8. If this goal was completed or is in progress, please provide an update and summarize efforts.

New goal.

9. Briefly describe or list the types of resources (staffing, equipment, technology, facilities, etc.) that are needed to support and achieve this goal. Then enter all resource requests through the Resource Allocation Requests link below.

Retain the services of a telescope professional, obtain needed parts and materials to complete the repairs. Resource Allocation Request submitted under Earth Science program review.

Resource Allocation Requests

- Enter requests in the Program Review Resource Allocations Request Form (Secured – YCCD Login Required) located on the [Program Review webpage](#) under the Resource Allocation Requests heading.

Goal 2

1. State the status of this goal (new, in-progress, or completed):

In-progress.

2. State this goal in one or two sentences?

Continue to take the StarLab to elementary schools in Tuolumne, Calaveras, and Amador counties, host on-campus star nights for students and the community, and participate in community events such as Forest Service star nights at the Bald Mountain helitack base during the summer.

3. What is a short name for this goal?

Community Outreach.

4. In what ways will achieving the goal support the college's mission and/or core values?

The goal supports the college's mission by providing educational opportunities throughout the community with the hopes of inspiring new students to attend Columbia. It helps support our core values by demonstrating that "Columbia College values its role in the community and is dedicated to strengthening and enriching the quality of life of all those we serve."

5. List the college-wide strategic goals that will be addressed by this goal (include all that apply and remove any that do not apply).

- Increase award completion
- Reduce barriers to completion
- Reduce equity gaps
- Increase transfer readiness
- Maintain institutional stability

6. What steps are you going to take to achieve this goal?

Continue to coordinate with local educators and community members to schedule and host astronomy-related events.

7. How are you going to measure completion of this goal?

The number of events and participants will determine whether this goal was successfully completed.

8. If this goal was completed or is in progress, please provide an update and summarize efforts.

In progress. The StarLab will be taken to Pine Grove Elementary on March 23 for their Science Night where students and parents will be provided with astronomy experience. The Forest Service has invited an instructor to host star nights for three events over the summer at the Bald Mountain helitack base near Little Sweden on Highway 108 (event dates are currently being planned). Curtis Creek Elementary and Sonora Elementary have had the StarLab visit during the 2022-2023 school year, with approximately 500 students participating over three days.

9. Briefly describe or list the types of resources (staffing, equipment, technology, facilities, etc.) that are needed to support and achieve this goal. Then enter all resource requests through the Resource Allocation Requests link below.

No additional resources are needed currently, however maintenance on the StarLab may be needed within the next year or two as it is nearing the end of its anticipated service life of 10 to 12 years (purchased in about 2012).

Resource Allocation Requests

- Enter requests in the Program Review Resource Allocations Request Form (Secured – YCCD Login Required) located on the [Program Review webpage](#) under the Resource Allocation Requests heading.

Goal 3

1. State the status of this goal (new, in-progress, or completed):

New

2. State this goal in one or two sentences?

Add an additional section of the course to accommodate the large wait listed students.

3. What is a short name for this goal?

Additional course section.

4. In what ways will achieving the goal support the college's mission and/or core values?

The course has been shown to be a high-demand course with large waitlists the past few semesters. Since the course supports the General Science award, it is important to ensure students have access to the courses they need to complete awards.

5. List the college-wide strategic goals that will be addressed by this goal (include all that apply and remove any that do not apply).

- Increase award completion
- Reduce barriers to completion
- Reduce equity gaps
- Increase transfer readiness
- Maintain institutional stability

6. What steps are you going to take to achieve this goal?

Be prepared to teach an additional section if needed.

7. How are you going to measure completion of this goal?

Successfully manage a second section of an existing course.

8. If this goal was completed or is in progress, please provide an update and summarize efforts.

New goal.

9. Briefly describe or list the types of resources (staffing, equipment, technology, facilities, etc.) that are needed to support and achieve this goal. Then enter all resource requests through the Resource Allocation Requests link below.

Overload time would be required, but no new equipment or technology support would be required.

Resource Allocation Requests

- Enter requests in the Program Review Resource Allocations Request Form (Secured – YCCD Login Required) located on the [Program Review webpage](#) under the Resource Allocation Requests heading.

Submit

- When you have completed all areas of the Program Review as outlined above, notify your dean by typing the @ symbol and your dean's name in the box below (e.g. @Sean Osborn, @Steve Amador, etc.).

[@Sean Osborn_](#)
[@Jeri Pourchot_](#)

Dean's Review and Feedback

Deans: Please review the form above and place any thoughts or feedback that you have in the space below. Feedback from AAC, counseling, industry, etc. can be included. When completed, please put the @ symbol and the faculty member name(s) at the end so that they will get notified when your review is completed.

Astronomy has been successful at Columbia College. Students are doing well. The course supports general education and has a strong completion rate. The observatory needs to be updated and repaired and this should be considered for AY 23-24. Given the success of astronomy, it appears this repair would only tend to enhance those already good completions.