

Dept - (PSME) Astronomy

Program Mission Statement: The Astronomy Department's Program Learning Outcomes are that the student will be able to 1) appraise the benefits to society of astronomical research, 2) evaluate the impact on Earth's characteristics of the evolution of the solar system, stars, and stellar systems, and 3) evaluate astronomical news items or theories about astronomy based upon the scientific method. These outcomes contribute to the College's student core competencies in communication & expression, information literacy, and critical thinking.

I.A.1 What is the Primary Focus of Your Program?: Transfer

I.A.2 Choose a Secondary Focus of Your Program?: Personal Enrichment

I.B.1 Number Certificates of Achievement Awarded:

I.B.2 Number Certif of Achievement-Advanced Awarded:

I.B.3 #ADTs (Associate Degrees for Transfer) Awarded:

I.B.4 # AA and/or AS Degrees Awarded:

I.C.1. CTE Programs: Impact of External Trends:

I.C.2 CTE Programs: Advisory Board Input:

I.D.1 Academic Services & Learning Resources: #Faculty served:

I.D.2 Academic Services & Learning Resources: #Students served:

I.D.3 Academic Services & Learning Resources: #Staff Served:

I.E.1 Full time faculty (FTEF): 1.8 (down from 2.5 last year)

I.E.2 #Student Employees:

I.E.3 % Full-time : From the 2015-2016 academic year to the most currently reported year, 2016-2017, the percent load taught as full-time changed from 53% to 44%, a decrease of 17%. This was due almost entirely to the retirement of a full-time faculty member who served in both Astronomy and Meteorology.

I.E.4 #Staff Employees: 1

I.E.5 Changes in Employees/Resources: As noted in I.E.3, one full-time faculty member retired and was not replaced with a full-time instructor. During the academic year, four part-time instructors were hired

at various times to teach some of the sections the retiree taught (and the retiree himself taught two sections with reduced load), but that could not entirely compensate for the loss.

II.A Enrollment Trends: Enrollment in Astronomy courses dropped significantly in 2016-17. Census enrollment was 2,266 in that academic year, a drop from the previous year of 12%. That is twice the decline in census enrollment of De Anza College overall. Since the Astronomy program has historically outperformed the College average, this significant drop, while in part due to the overall decline in enrollment, must have been due to other factors as well. It was.

The Astronomy department was hit with a “perfect storm” of conditions that negatively affected enrollment in 2016-17 (and which continue to do so in 2017-18.) Four factors are involved:

First, the previously-noted decline in enrollment college-wide probably accounts for roughly half of our enrollment’s decline.

Second, the previously-mentioned retiree, Paul Olejniczak, was the most popular instructor in our department with students, and he regularly accepted significantly more students in his sections than the class limit. In addition, he taught overloads on a regular basis.

Third, replacing all of the enrollment he provided with part time instructors proved to be impossible for a number of factors, starting with a severe paucity of quality, qualified candidates for a part-time position in Astronomy. Despite casting a wide net, we (the department and the division) were only able to secure four qualified individuals, each of whom (for a variety of reasons) wound up teaching only one section for us. Moreover, only one of the four had any previous experience teaching astronomy; their core expertise was in physics, which technically satisfies the state’s minimum qualifications for astronomy. Since those three were teaching astronomy for the first time, we didn’t feel that they should be given the very large, concurrent (double) sections that Mr. Olejniczak had taught.

Fourth, a minor increase in load factor for our classes (which we did not request) from $1/9$ (.111) to $1/8$ (.125) had the unintended consequence of reducing the number of sections an individual part-time faculty member could teach during the year from 6 to 5 because of the annual limit of $2/3$ (.667) load factor for a part-timer (or full-timer as overload.) We lost two sections’ worth of instructor availability due to this change.

It should be noted that none of these factors has ameliorated in the current (2017-18) academic year.

II.B.1 Overall Success Rate: Our overall success rate has remained steady for the past five years within a very narrow range around 80% (between 79% and 81%.)

II.B.2 Plan if Success Rate of Program is Below 60%: Our success rate is well over 60% (see above).

II.C Changes Imposed by Internal/External Regulations:

III.A Growth and Decline of Targeted Student Populations Interestingly, our population of targeted groups' students declined by only 6% from 2015-16 to 2016-17, far less than the decrease in non-targeted groups.

III.B Closing the Student Equity Gap: Our department's equity gap (comparing success rates of targeted and all groups) has remained essentially constant at around 10% for the past three years. Specifically, success rates for those three years for targeted groups has been 68%, 74%, and 69%, and for all groups 80%, 81%, and 79%. The fluctuations are negligible. The 2016-17 gap is very similar to the PSME division at large, and very slightly higher than the college-wide gap.

Our primary practical effort to reduce the gap this year involved the textbook for our general education classes: in the current (2017-18) academic year, we have switched from a traditional hardcopy text to a free online text. We had reason to suspect that many students were going without their own copy of a textbook simply because the cost is too great. Relieving students of the financial burden of purchasing a text should help them all, obviously, but will be of greatest benefit to financially-distressed students, which our targeted groups tend to be in greater proportion, so it should help those groups in a more significant way. We look forward to seeing if this is narrowing the gap.

III.C Plan if Success Rate of Targeted Group(s) is Below 60%: As noted in III.B above, our success rate for targeted students is well above 60%.

III.D Departmental Equity Planning and Progress: See the narrative in III.B above.

IV.A Cycle 2 PLOAC Summary (since June 30, 2014): We have assessed all PLOs in cycle 2 but are having some difficulty formulating a coherent way of presenting the results in a cogent way because of the very different ways in which the four instructors involved have done and the assessments.

IV.B Cycle 2 SLOAC Summary (since June 30, 2014): We have assessed all SLOs in all three of our courses in cycle 2 but are having the same intra-departmental difficulty entering them into the system. We will resolve this by the end of the school year.

V.A Budget Trends:

V.B Funding Impact on Enrollment Trends:

V.C.1 Faculty Position(s) Needed: One full-time instructor

V.C.2 Justification for Faculty Position(s):

As noted above, our loss of a full-time instructor to retirement at the end of the 2015-16 academic year has had a severe, ongoing negative impact on our enrollments. Moreover, we are going to lose another instructor to retirement at the end of the coming (2018-19) academic year. If we do not hire a new full-time astronomy instructor by the beginning of 2019-20, there will be *no full-time instructor* whose

duties are entirely within the Astronomy department. (The only other full-time faculty member who teaches Astronomy, Dr. Marek Cichanski, is shared with the Geology department.)

This is a dire need. For the past 30 years, astronomy courses have provided popular courses to large numbers of students. Without adequate staffing and fresh, enthusiastic full-time faculty, that college asset is already degrading and will continue to do so.

V.D.1 Staff Position(s) Needed:

V.D.2 Justification for Staff Position(s)::

V.E.1 Equipment Requests:

V.E.2 Equipment Title, Description, and Quantity:

One new RSpec Explorer spectroscopy classroom demonstration device.

V.E.3 Equipment Justification:

V.F.1 Facility Request:

V.F.2 Facility Justification:

V.G Equity Planning and Support:

V.H.1 Other Needed Resources:

V.H.2 Other Needed Resources Justification:

V.J. "B" Budget Augmentation: Please refer to the Dean's summary.

V.K.1 Staff Development Needs:

V.K.2 Staff Development Needs Justification:

V.L Closing the Loop:

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