Instructional Units Program Review Year Five Update - Astronomy Latest Version

This cycle is for Instructional Units to complete the Year Five Update of the Program Review Cycle.

Instructional Units Program Review Year Five Update

1. Program Update : Version by **Cabral, Scott** on **02/03/2022 17:58**

1a. Provide any important changes or updates within your program since your Program Review Year Three Update (2019-20). (New degrees, new curriculum, staffing changes, etc.)

Changes within the ASTRO unit since Fa19/Sp20. There have been no important changes. There have only been minor alterations in the pool of part-time teachers due to the loss of Abby Fuller-Innes and the hiring of Marla Moore and Trevor Gonzalinajec. Jane Dignon has also taught ASTRO from time to time.

1b. Please address the following enrollment data provided for your program.
1.b.1. What are the enrollment trends over the past 3 years, beginning with Fall 2018? (Please address census enrollment, census fill rate, and productivity (FTES/FTEF)

Enrollment trends over the past 3 years, Fa18, Fa19, Fa20. These numbers were taken from Tableau1.4cd.edu.

	Census enrollment Fa18 / Sp19	Census fill rate Fa / Sp	Productivity (FTES/FTEF) Fa / Sp
Fa18 / Sp19	1,256 / 1,193	88% / 93%	20.1 / 21.6
Fa19 / Sp20	1,384 / 1,195	97% / 91%	22.2 / 20.9
Fa20 / Sp21	1,161 / 1,121	90% / 88%	20.0 / 18.0

If we go back and include the Fa17 / Sp18 numbers: 1,285 / 1,160 88% / 93% 19.7 / 21.4
then there were small increases in the numbers from fall to fall from Fa17 to Fa19 and from spring to spring from Sp18 to Sp19, but then the pandemic hit in Sp20 and all the numbers decreased steadily from Sp20 on.

1b. Please address the following enrollment data provided for your program.
1.b.2. What does the data suggest in terms of future needs/directions?

If we take the pandemic conditions to be our new normal going into the future, then the decrease in the enrollment numbers starting from Sp20 indicates that we need to improve our teachers' skills and techniques with remote teaching. It will be valuable to see if increasing numbers of face to face sections in coming semesters will result in better results for enrollments, fill rates, and productivities. A future need might be professional development about how to increase student interaction and engagement in remotely-taught classes. A future direction might be to increase the number of face to face sections, if it turns out that more face to face sections improve enrollments.
1c. Provide a brief update on the timeline for your program's goals as listed in your Program Review Year Three Update (2019-2020). If your program's goals are in progress or modified, please include action steps and responsible parties in your explanation.

ASTRO goals update.
ASTRO Goal 1: Increase cohesion among the astronomy faculty.
This goal is in progress.
No real action steps have been taken since the pandemic to get the part-time faculty together. The goal is supposed to be carried out with regularly scheduled, frequent get-togethers of all six or seven astronomy teachers at a restaurant or a picnic so that they can exchange teaching and assessment stories, successes, and shortfalls. Our schedules are currently so different that we would only be able to meet two or three at a time to share ideas. Fortunately, Mindy Capes, the department chair, conceived of an

initiative where the full-time faculty would have discussions together as part of a book club. It is hoped that this activity will create more communication among the silos that exist within the physical science department.
Scott Cabral, the astronomy discipline lead, is the responsible party.

ASTRO Goal 2: Make the astronomy curriculum more related to students of color.
This goal is in progress.
An action step is that Scott wrote a large number of in-class article and video activities that relate to GE SLO 5 (diverse multicultural perspectives), and he has redone all the pictures on his PowerPoint slides to maximum the representation of people of color. It is hoped that this makes the diverse students feel a little less out of place, which they already feel because they are non-science students taking a science class. It would also help for all the part-timer instructors to get together and share ideas about improving the course's appeal to non-white students, but this has been impossible because of everyone's varied schedules.
Scott Cabral is the responsible party.

ASTRO Goal 3: Have routine field trips.
This goal is in progress but is on hold during the pandemic.
No steps have been made toward making field trips an integral part of the course. Jeff Adkins is the expert on field trips because of the field trips that he routinely does with his DVHS students, but Scott has no contact with him these days. He never seems to respond to email.
Scott is the responsible party.

FOR CTE PROGRAMS ONLY
1c. Community and Labor Market Needs (Link Ed Code 78016 (http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=78016.), Title 5, 51022 (https://govt.westlaw.com/calregs/Document/I69DDBCC0B6CB11DFB199EEE3FF08959C?viewType=FullText&listSource=Search&originationContext=Search+Result&transitionType=SearchItem&contextData=(sc.Search)&navigationPath=Search%2fv1%2fresults%2fnavigation%2fi0ad7140b0000016c911a16d7fb7f969b%3fNav%3dREGULATION_PUBLICVIEW%26fragmentIdentifier%3dI69DDBCC0B6CB11DFB199EEE3FF08959C%26startInde

No Value

FOR CTE PROGRAMS ONLY
1d. Advisory Board Update and Analysis (CTE related only) Include dates of Advisory Board meetings in 2020-2021, and those completed or planned in 2021-2022.

No Value

Goals and Objectives			Modified	In Progress	Abandoned	Completed
Goal 1. Strengthen a culture of equity, diversity, inclusion, and racial justice. (District #2 and #4)						
Recommended Actions	ASTRO Goal 1: Increase cohesion among the astronomy faculty. Timeline: It may take a few semesters to achieve this goal due to our inability to meet during the pandemic. Responsible Party: Scott Cabral, the astronomy discipline lead Anticipated Outcome: We hope to get increased interaction among the astronomy faculty along with more interchange of teaching techniques and greater sharing of methods for improving the teaching and assessing of CSLOs	0 linked SLOs 0 resource requests				
Goal 2. Increase and maximize equitable opportunities for students to successfully complete courses and programs. (District #1 and #2)						
Recommended Actions	ASTRO Goal 2: Make the astronomy curriculum more related to students of color. Timeline: This may take a few semesters to make substantial progress on. Responsible Part: Scott Cabral, although the part-timers should be responsible for participating and helping with this ASTRO goal. Anticipated Outcome: Improved course success among students of color including better learning and assessment results for those students	0 linked SLOs 0 resource requests				
	ASTRO Goal 3: Have routine astronomy field trips. Anticipated Time: Probably whenever the pandemic ends and the campus fully reopens. Responsible Party: Scott Cabral Anticipated Outcome: We hoped to stimulate, motivate, and enthuse students with the course so that they would have greater course success rates.	0 linked SLOs 0 resource requests				
Goal 3. Increase opportunities that will prepare students to enter high-demand and living-wage occupational fields. (District #3)						
Goal 4. To better support students in accomplishing their academic and career goals – from entry to completion/transition – and to enhance course-level and program-level achievement, expand and deepen educational, workforce, and community partnerships. (District #3)						
Goal 5: Effectively utilize institutional resources to meet the needs critical to the College mission. (District #4 and #5)						

2. Vision for Success Goals Update : Version by **Cabral, Scott** on **02/03/2022 17:58**

2a. The following table lists the *Vision for Success* indicators that we must align to as a College and as a District. Please look at your program data (Tableau) for each of the following *Vision for Success* indicators. Please address all indicators that are relevant to your program and provide a status update on your program goals from your Program Review Year Three Update. Please include action steps if your goal(s) has been modified and an explanation if your goal(s) has been abandoned. *

NOTE - Please copy and paste the table below in your response and complete accordingly.

Vision for Success Indicators and ACCJC Indicator	Program Set Goals (from PR Year 3 Update)	Status (Indicate Modified, Completed, or Abandoned)	Timeline	Responsible Parties	Action Steps/ Explanation
Course Success					
Degrees (AA, AS, ADT)					
Certificates of Achievement					
Unit Reduction					
CTE Jobs					

Vision for Success Indicators and ACCJC Indicator	Program Set Goals (from PR Year 3 Update)	Status (Indicate Modified, Completed, or Abandoned)	Timeline	Responsible Parties	Action Steps/ Explanation
Course Success	71.4%	In the LMC Program Review Course Success chart, the Grand Total Success Rate is listed as 74.3%. It would appear that this goal has been completed.		Scott Cabral	There may be two reasons that we could hypothesize for the steady increases in the ASTRO success rates between the '16-'17 academic year and the '20-'21 academic year. One reason is the support that the astronomy instructional unit has received from various programs, such as the Transfer Academy, PUENTE, and UMOJA when it comes to building up students' time management and study skills. Students may also have benefited from improved learning through the various tutoring services that are available. A second reason could be the interactive and imaginative teaching techniques that have been used by our wonderful astronomy part-timers. This semester, for example, Katie Berryhill gamified her classes to make the learning process more interesting, interactive, and fun. Scott Cabral has also tried to craft classroom learning activities that involve more group work, practice, and reinforcement of the CSLOs during class lessons.
Degrees (AA, AS, ADT)	N/A				
Certificates of Achievement	N/A				
Unit Reduction	N/A				
CTE Jobs	N/A				

2b. The *Vision for Success Goal 5 - Equity* is designed to reduce the equity achievement gap on course seuccess for disproportionately impacted (DI) student populations. The College has identified the following three disproportionately impacted (DI) populations: African-American, economically disadvantage students (low income), and foster youth students.
Please review your program data (Tableau) for each of the aforementioned DI populations, and provide a status update on your program goal(s) for your previously selected DI population(s) in your Program Review Year Three Update. If your goal(s) has been modified please include action steps and if your goal(s) has been abandoned please provide an explanation.*

NOTE - Please copy and paste the table below in your response and complete accordingly.

Course Success by DI Population	Program Set Goals (PR Year 3 Update)	Status (Indicate Modified, Completed or Abandoned)	Timeline	Responsible Parties	Action Steps/ Explanation
African American					
Low Income					
Foster Youth					

Course Success by DI Population	Program Set Goals (PR Year 3 Update)	Status (Indicate Modified, Completed or Abandoned)	Timeline	Responsible Parties	Action Steps/ Explanation
African American	Our PR Year 3 Update goal was 62%. In the PR Course Success chart, the Grand Total Success Rate is listed as 63.0%.	It would appear that this goal has been completed.		Scott Cabral	On possible hypothesis for the steady improvement in African American success rates from '16-'17 to '20-'21 is the good relationship and good will that the faculty have created with the African American athletes by attending their games and allowing those students into full astronomy sections. African American students appreciate being granted special arrangements, even when those arrangement involve exceptions to the official class policies that are on the syllabus. Students see the good will that the instructors practice and they reciprocate by trying hard, learning, and achieving the CSLOs.
Low Income	Our goal was 73%. The Grand Total Success Rate is 73.4%. In the column labelled "3% increase from '16-'17," the desired success is listed as 71.7%.	The achieved rate of 73.4% equals the 73% goal in the Year 3 Update. The achieved 73.4% is well above the required 3% increase number.		Scott Cabral	The not low-income success rates have fluctuated between the low 70 percentagess and the high 70 percentages. The low-income success rate, on the other hand, have been much more variable. They have ranged from the high 60 pecentages to the low 80 percentages. Also the low-income success rate have oscillated where some years the low-income rate is lower than the not low-income rate and other years the low-income rate is higher than the not low-income. The rates for the low-income and not low-comes were almost always within a couple of percentage points of each other. In the Grand Total Success Rate column, the low-income rate ended up being less than the not low-income rate.

Foster Youth	**Our goal was 63%. The Grand Total Success Rate ended up at 61.7%.**	**We may need to modify the success rate goal for this group.**		**Scott Cabral**	**This would seem to be the group where we are no doing as well as we need to. The foster youth success rate jump up and down each year between 51% and 70%. The large increases in the rates up and down may be due to the small numbers of students who go into those numbers. This is the one group of the three groups where the foster youth success rate is always below the not foster rate.** **When it comes to action steps, the first thing that comes to mind is to somehow find out who those foster students are and to try to increase their success with the following ideas.** **We could do internal student surveys and assessments of their learning styles and then make those learning activities a bigger part of the class. We could create peer support groups and study cohorts in order to get the foster students to collaborate, mentor, and nurture each other. We could be sure that those foster students who need special DSPS-type accommodations get it. We could do everything that we can to permeate the learning environment with a welcoming, accepting atmosphere so that they are fully assimilated into the classroom community and fully involved in student interaction and fellowship.** **The faculty may need to educate themselves on the nature of foster youth, their psychology, and the best ways to reach them and motivate them to work hard and achieve the CSLOs.**

3. Assessment Status Update and CSLO Assessment Effectiveness : Version by **Cabral, Scott** on **02/03/2022 17:58**

a. Please review the data provided on the assessment status of courses in your discipline for Cycle Two (2017/18-2020/21). For any courses that were not assessed in Cycle Two please list them in the table below in your response including why they were not assessed, when you are going to assess them, and who is going to assess them.*

NOTE - Please copy and paste the table below in your response and complete accordingly (add extra rows if needed).

Course Name/ Number	Reason course was not assessed	When course will be assessed	Faculty Responsible for Course Assessment

Course Name/ Number	Reason course was not assessed	When course will be assessed	Faculty Responsible for Course Assessment
n/a--CSLOs assessed			

b. Discuss the results of any CSLO assessments performed this year. What changes, if any, are planned to improve student success (ex. pedagogy, assessment instruments are not appropriate to measure, CSLO rewritten etc.)?

The seven CSLOs for ASTRO were assessed in Sp21.

		High	%	Medium	%	Low	%	
CSLO 1	Read critically	27	57%	11	23%	9	19%	In-class reading questions
CSLO 2	Write effectively	14	30%	27	57%	6	13%	Essay part of oral report
CSLO 3	Speak effectively	7	30%	10	43%	6	26%	Oral report, which many people refused to do
CSLO 4	Interdisciplinary connections	24	71%	4	12%	6	17%	Article HW 3 "Interdisciplinary Stars"
CSLO 5	Think critically	11	25%	18	42%	14	32%	Observing Assign. 2 "Starwatch"
CSLO 6	Ethical implications	31	84%	3	8%	3	8%	Article HW 2 "Ethical Research"

CSLO 7	Multicultural perspectives	32	64%	8	16%	10	20%	Article HW 1 "Multicultural Constellation"

I took feedback from students about the assessments' instructions and questions and improved the assessments. I created PowerPoints to explain the observing assignments since I am not able to demonstrate them in the planetarium. I also created PowerPoints to explain Venn diagram questions and analogy questions in order to increase student understanding of those kinds of critical thinking questions. I put together a number of YouTube videos of Neil deGrasse Tyson in conversion (with various people) in order to ask critical thinking questions about his opinions on various issues.

I improved the Article HWs that assess interdisciplinary connections, ethical implications, or multicultural perspectives. If I think of a much better way to assess those CSLOs, then I will redo those Article HWs.

In Sp21, I started to teach and assess critical reading by having five reading questions as part of the in-class questions every week. The reading questions consist of reading two or three paragraphs that students read and then answer questions about them. Doing this reading work every week gives students a lot more practice and improvement with critical reading. A few years ago, I did a training with Sandra Mills about how to teach and assess critical reading; so, I put what she told me into operation.

I improved my teaching and assessing of critical thinking with more Venn diagrams, hypothetical scenario questions, concept tables, and analogy questions. I noticed that GE SLO 3, "Think critically and creatively," is really two CSLOs: (1) think critically and (2) think creatively. I plan to add an eighth CSLO to cover "think creatively."

In order to improve student understanding, I added many group response questions to my PowerPoints. Years ago, I would ask simple, one-sentence questions in order to check on student understanding; but, now the the group response questions are elaborate, typed questions that are just like the unit test questions. I then explain the reasoning that is involved in answering the questions. Also, I added slides to my PowerPoints at the halfway point of the week so that when we start the PowerPoint for the second class session of a week, I can give a detailed review of what we did in the first class session of the week. Years before, I would mention the previous class session's material briefly; but, now I do a lengthy, in-depth review. I spend hours and hours each week working on and trying to perfect my PowerPoints, which I think helps students to understand the material.

In the Sp22 semester, I plan to create Hypercard card stacks that students will work through in place of listening to a PowerPoint lecture. The teaching tool Hypercard is now defunct, but I can still create card stacks using PowerPoint that will work the same way. This in-class activity will make ASTRO more interactive among students in small groups and decrease the time the students spend listening passively to a lecture. This activity will also involve learning how to create breakout rooms in Zoom.

With ASTRO 11, there are only three CSLOs, which are: read critically, write effectively, and think critically. Any lab that an ASTRO 11 student does will automatically teach and assess those three CSLOs. Here are the ASTRO 11 assessment results so far this Fa21 semester.

	High	%	Medium	%	Low	%		
CSLO 3	18	56%	8	25%	6	19%	Think critically	Lab 1
CSLO 1	26	87%	2	7%	2	7%	Read critically	Lab 2
CSLO 2	23	88%	2	8%	1	4%	Write effectively	Lab 5

I do not know what plans Felix Wasiak has when it comes to revising and improving the ASTRO 11 labs. I know from evaluating Felix that he works very hard at making his classes as good as they can be. I need to email him about what he wants to do with regard to improving the ASTRO 11 teaching and assessment. His enrollments are so good that he insists that we continue to have two sections of ASTRO 11 rather than the traditional one section.

4. Course Outline of Record Updates : Version by **Cabral, Scott** on **02/03/2022 17:58**

Please review the data provided in eLumen for the status of the Course Outline of Records (COORs) in your discipline. Please indicate in the table below any COOR(s) for your discipline that has not been updated and identify the faculty member responsible for submitting the updated COOROs) to the Curriculum Committee by November 1, 2021.*

****NOTE - Copy and paste the table below in your response and complete accordingly (add extra rows if necessary).***

Course *(Enter Course Name ex. ENGL-100)*	Faculty Responsible for COOR Update

Course *(Enter Course Name ex. ENGL-100)*	Faculty Responsible for COOR Update
n/a--No CORs needing update	

Impact of Resource Allocation