LMC Comprehensive Unit Review

Instructional Units

2017-2018

Program/Discipline: Astronomy

The following provides an outline of the required elements for a comprehensive unit/program review for Instructional Programs and Units. Upon completion of this report, please upload your document in the unit/program review application data/documents tab.

1. Program Changes

Astronomy is not a program.

2. Degree and Certificate Requirements

Please review the data provided on all degree/certificate completions in your program, including locally approved College Skills Certificates from Fall 2012—Spring 2017.

Astronomy does not offer a degree or certificate.

3. Frequency of Course Offerings

Please review the data provided on frequency of all courses offered in your discipline in the last 2 years (Fall 2015-Spring 2017).

3.1. If a course has not been offered in the past two years, but is required for a degree or certificate, please explain why it has not been offered, and what the plan is to offer it in the future.

Both astronomy courses, ASTRO 10 (3 units) and ASTRO 11 lab (1 unit) have been offered every semester in the last two academic years.

3.2. If the course is not required for a degree or certificate, is the course still needed in the curriculum or is the department considering deleting it?

Almost all non–science major students at LMC take ASTRO 10 because it satisfies the transfer requirement to CSU and UC for one physical science lecture class.

A small number of students, around 14 students or fewer per semester, also take the ASTRO 11 lab because it satisfies the transfer requirement for one science lab class, either physical science or biology.

Most non–science major LMC students satisfy this lab requirement with a biology class that includes a lab. As a result, the astronomy faculty would recommend deleting the ASTRO 11 lab class from the LMC Class Schedule. If allowed by management, the astronomy faculty would be willing to delete ASTRO 11 from the Class Schedule starting in Fa18.

4. Existing Curriculum Analysis

4.1. Course Outline Updates

Please review the data provided on the status of COORs in your discipline. (Note: This data does not reflect courses submitted after May 2017.) For each COOR that has *not* been updated since Spring 2012, please indicate the faculty member responsible for submitting the updated COOR to the Curriculum Committee by April 18, 2018.

Course	Faculty Responsible for COOR Update
ASTRO 10	The COOR was updated on 3–3–14
ASTRO 11	The COOR was updated on 4–20–15

4.2. Course Offerings/Content

How have your courses changed over the past 5 years (new courses, significant changes to existing courses)?	There have been no significant changes to ASTRO 10 or ASTRO 11 in the last five years.
How have these changes enhanced your program?	Not applicable.

5. New Curriculum Analysis

5.1. If you are creating new degrees or certificates in the next 5 years: (Indicate N/A if no new degrees or certificates are planned.)

Astronomy has no plan to do this.

6. Advisory Board Update (For all CTE TOP coded programs)

Give an overview of the current purpose, structure, and effectiveness of your Advisory Board. Include: membership, dates of last meetings over the past two years.

Astronomy has no advisory board.

7. Assessment Effectiveness:

7.1. Course Level Assessment

Please review the data provided on assessment status of courses in your discipline in Cycle 1 (2012-2017).

7.1.1. If there were any courses that were not assessed in Cycle 1, please explain why they were not assessed.

ASTRO 10 is in Cohort 2. Its COOR update was due in the Fa14–Sp15 academic year and its assessment did occur in Cycle 1 and was approved on May 8, 2014

ASTRO 11 is in Cohort 2. Its COOR update was due in the Fa14–Sp15 academic year and its assessment did occur in Cycle 1 and was approved on May 26, 2015.

7.1.2. If a course was not assessed in Cycle 1 because it was not offered, what is the future of that course?

a. Delete the course
b. Market/promote the course to gain enrollments
c. Other

Not applicable.

7.1.3. Course level assessment should be meaningful, measurable and manageable. Overall, reflecting on the course level assessment, please rate the degree to which you feel your assessments meet these 3M's.

Meaningful: 2

1	2	3
The assessment was not meaningful in collecting data or information that supported course improvement or pedagogical changes.	The intent was understood, but the outcome fell short of meeting the objective of course assessment, which is to improve student learning. The changes to the course or pedagogy to support the course were not clear.	Changes were made to the course content or delivery to improve course effectiveness. The process promoted pedagogical dialog within the department, and changes were adopted accordingly.

Measurable: 3

1	2	3
The data collected did not inform teaching and learning.	The assessment produced some measurable information, but created more questions than answers.	Results were straightforward and easy to interpret. The course of action to improve the course or its delivery was clear from the data that was collected.

Manageable: 2

1	2	3
Assessment was not manageable.	The assessment process was somewhat manageable, but posed challenges to implement across the program.	The assessment was easily scaled across the department so that full- and part-time faculty could participate with meaningful outcomes.

7.1.4. What changes in the assessment process itself would result in more meaningful data to improve student learning?

In astronomy, assessment fell short of producing student learning from one semester to the next. The reason is we faculty can explain the meaning of the CSLOs and their assessment, we can proselytize about the importance of improving CSLO results, and we can beg students to do what they are supposed to do when it comes to learning. Unfortunately, a certain fraction of students refuse to come to class, study, learn, or give their classwork a maximum effort.

The change to the assessment process itself that would improve student learning would be to improve the way that the astronomy faculty communicate with students in order to improve students' attitude about working hard at their various forms of school work. The assessment process needs better motivation of students by the faculty. This includes motivating students to use the Center for Academic Support, the tutoring in the MESA Center, and the faculty's office hours.

7.1.5. Share an outcome where assessment had a positive impact on student learning and program effectiveness.

Improvements to the writing of the Article Homeworks that assess GE SLO 2 (interdisciplinary connections), GE SLO 4 (ethical implications), and GE SLO 5 (multicultural perspectives) resulted in higher scores and assessment results on those three GE SLOs, which presumably reflect better student learning and program effectiveness. The improvements consisted of writing more clear writing prompts and editing the article readings for better comprehension and more engagement by students.

The planetarium now has a giant poster of the five GE SLOs so all the astronomy teachers can point to and explain each GE SLO that they teach in lecture, cover with in–class activities, and deal with when they assign homework.

7.2. Program Level Assessment

7.2.1. In 2016-2017, units engaged in program level assessment. **Please submit all Program Level Assessment Reports using the link provided**. Describe one important thing you learned from your program level assessment.
Please see responses to 7.1.5 (above) and 7.2.2 (below).

Not applicable.

7.2.2. What was the biggest challenge in conducting program level assessment?

Not applicable.

7.2.3. What resource needs, if any, were identified in your program level assessment?

Not applicable.

8. Course Success/Retention Analysis

Please review the data provided on course retention and success, which has been disaggregated by as many elements as district can provide in their SQL Report

One of our college goals as stated in our Integrated Plan is to "Increase successful course completion, and term to term persistence." Our Equity Plan identifies African- American and low income students as disproportionally impacted in terms of successful course completion. (Foster youth are also disproportionately impacted on this indicator, but numbers are too small to disaggregate by discipline/program) Please indicate how well students in these groups are succeeding in your discipline.

	African-American	Low Income Students	All students in program/discipline
Completion Rate (program/discipline)	87.1% (Fa16) 83.8% (Sp17)	89.4% (Fa16) 84.6% (Sp17)	90.1% (Fa16) 86.8% (Sp17)

Success Rate (program/discipline)	62.1% (Fa16) 53.0% (Sp17)	73.1% (Fa16) 64.1% (Sp17)	72.9% (Fa16) 65.3% (Sp17)

8.1. In looking at disaggregated data on success/retention, is there anything else that stands out?

African-American students are within a few percent (a few percent lower) than the entire student population, but their success rates are around 10% lower.

8.2. What are some strategies that might help students, particularly African-American, foster youth, and low income students successfully complete courses in your discipline? What resources would be needed to implement these strategies?

The faculty would favor required study halls for the LMC athletes. The majority of African American astronomy students tell me that they are athletes; and, required study hall sessions each week would induce athletes to learn the course content, do well on the homeworks, and get good grades on their oral reports and unit tests. Obviously, this idea would also benefit non–African American athletes.

It might also help the African American students to infuse more African American studies and perspectives into the astronomy curriculum. Traditional astronomy classes never include anything that African Americans would relate to culturally. When Scott Cabral taught PHYS 15 in Sp17, that section was picked by the GE Committee to assess diverse multicultural perspectives; so, Scott included several readings about African American and African astronauts, scientists, and scientific achievements. Tilting the ASTRO 10 curriculum more in a direction that that is more relevant to African American students might help with the motivation problem that was addressed in section 7.1.4 above.

9. Goals

9.1. Review your program's goals as listed in response to the final question of your 2012-2013 Comprehensive Program Review posted in the Data Repository of the PRST.

Highlight some of the key goals that were achieved over the past 5 years. What were the key elements that led to success?	One key goal was improve the overall student success rate in ASTRO 10 above 71%. The total student success rate in Fa14 was 79% and the rates have been slightly above 71% through Fa16.
Were there any goals that did not go according to plan? What were the key elements that impeded the progress on these goals?	Our other two goals were to obtain a second full–time, tenure–track astronomy instructor position and also to obtain an astronomy Lab Tech II. The Box 2A process was carried out in Fa17 and was not successful. But that process can continue. The Lab Tech II goal has not been achieved, but if Katie Berryhill agrees to take over the public planetarium shows at some time in the near future, then we would not need a Lab Tech to do planetarium shows. Also, Steven Goldenberg says that he is willing to do a lot of the other astronomy Lab Tech job responsibilities. We just hate to take him up on his offer because supporting astronomy is not his job.

9.2. Consider the College's Strategic Directions along with our Integrated Planning Goals listed here:

College Strategic Directions 2014-2019	Integrated Planning Goals
1. Increase equitable student engagement, learning, and success. **2. Strengthen community engagement and partnerships.** **3. Promote innovation, expand organizational capacity, and enhance institutional effectiveness.** **4. Invest in technology, fortify infrastructure, and enhance fiscal resources.**	**1. ACCESS: increase access through enrollment of students currently underserved in our community.** **2. IDENTIFYING PATHWAYS: Increase the number of students that define a goal and pathway by the end of their first year.** **3. COLLEGE-LEVEL TRANSITION: Increase the number of students successfully transitioning into college level math and English courses.** **4. PERSISTENCE & COMPLETION: Increase successful course completions, and term to term persistence.** **5. EQUITABLE SUCCESS: Improve the number of LMC students who earn associates degrees, certificates of achievement, transfer, or obtain career employment.** **6. LEARNING CULTURE: Enhance staff, faculty and administration's understanding and use of culturally inclusive practices/pedagogy, demonstrating empathy and compassion when working with students.**

List 3 – 5 longer term (5 year) new goals for your program. For each goal, pick 1 – 2 College Strategic Directions and/or 1 – 2 Integrated Planning Goals to which your new goal aligns.

Goals	Aligned College Strategic Direction(s)	Aligned Integrated Planning Goal(s)
Goal 1: Increase cohesion among the astronomy faculty. The astronomy part-timers and Scott never meet during the semester, there is no interchange of teaching ideas, and there is no communication about how much or how well everyone teaches and assesses the GE SLOs.	This goal would address 1 and 3 above. Meeting regularly to talk about student learning would increase student learning and success. Exchanging teaching and assessment ideas would promote innovation.	This goal would facilitate 4 and 5 above. The more we astronomy teachers do to improve our teaching and motivating of students, the more we increase our successful ASTRO 10 completions. Also, most non–science students take

		ASTRO 10, so the more students pass astronomy, the more students will earn associates degrees.
Goal 2: Evolve the ASTRO 10 curriculum away from the traditional white, Western European orientation that it has in normal astronomy college classes and textbooks and make our LMC course more easily relatable by and relevant to LMC's students of color.	This goal would enhance 1 above. As a Hispanic Serving Institution as well as a college with a sizeable African American student population, anything that would make students of color more eager to learn and achieve in the astronomy classes would help with student learning and success.	This goal would apply to 6 above. It should be noted that all students would benefit from a less traditional, more culturally inclusive way of teaching. As the outside workplace and society in general become more diverse, it is crucial that all Americans have interpersonal skills with people who are not just like them.
Goal 3: Establish routine field trips. Field trips were recommended for honors sections, but they are just as desirable for non–honors classes. These activities would stimulate the motivation and enthusiasm for ASTRO 10 that is the underlying basis for improving student success.	This goal would align with 2 above. We could tap into the expertise of outside experts and take advantage of the abundant planetaria, observatories, and star gazing parties that the Bay Area has to offer.	This goal would most strongly deal with 4 above because students would enjoy the class and find it more interesting which would stimulate them to work harder to learn and complete the course successfully.
Goal 4:		
Goal 5:		

OPTIONAL

9.3 Resource needs to meet five-year goals

Faculty/Staff Resource Request	
Department/Unit Goal - Reference #	Strategic Objective - Reference #

Department/Unit Name	Position Name/Classification	FTE

Position Type	Funding Duration	Funding Source	Est. Salary & Benefits
☐ Faculty R/T ☐ Classified ☐ Manager ☐ Student	☐ On-going/Permanent ☐ One-time	☐ Operations (Fund 11) ☐ Other	

Justification:

Operating Resource Request

Department/Unit Goal - Reference #	Strategic Objective - Reference #

Department/Unit Name	Resource Type	
	☐ Equipment	☐ IT Hardware/Software
	☐ Supplies	☐ Facility Improvement
	☐ Service/Contract	☐ Other

General Description	Est. Expense

Justification:

Professional Development Resource Request

Department/Unit Goal - Reference #	Strategic Objective - Reference #

Department/Unit Name	Resource Type
	☐ Conference/Meeting ☐ Materials/Supplies ☐ Online Learning ☐ IT Hardware/Software ☐ Other

General Description	Est. Expense

Justification: