

## Comprehensive Program Review Instructions

Your department has been scheduled for a comprehensive review in spring 2015. To complete this review, please provide the following to the Educational Planning Committee (email to [pharesd@lamission.edu](mailto:pharesd@lamission.edu) and to [allenmk@lamission.edu](mailto:allenmk@lamission.edu)) by February 1, 2015.

1. **(Par)** Briefly outline the program's core goals and priorities for the next three years. Describe the rationale (data, information, reasoning, etc.) that supports your plans. Do you foresee any changes in your field over the next few years that will impact the future direction of the department/program? (We will send a spreadsheet to be filled out as partial answer to this question within the next month.)
1. In the grid below, please describe a few (no more than five) long-term, big picture goals for your department, discipline, and/or program over the next three years. These should be goals you feel are important for you, your students, and the college and should be supported by some of the shorter-term objectives included in your annual program review updates. Please also indicate the status of each goal (the categories "Completed" and "Dropped" should not be selected if this is the first time you are filling out this grid), and describe how the goal(s) align with the College's Strategic Master Plan/Educational Master Plan goals, department/program SLOs/PLOs, and/or LAMC's Institutional Learning Outcomes (ILOs). Also specify the actions and/or activities you are planning (or that are ongoing) that will enable you to achieve your goal(s). It is also important that you include measurable outcomes supported by data that signal the completion of the activities and actions.

## Department of Life Sciences

### Mission

The mission of the Department of Life Sciences is to prepare students, as critical and life-long learners. The Department seeks to provide exemplary, innovative, and media rich instruction in (1) courses that fulfill the Science portion of general education and/or liberal arts requirements, (2) a broad-based curriculum designed to provide Biological Science majors, and (3) specialized courses for those preparing to transfer to health-oriented fields (e.g., nursing).

### Goals

- Offering of new courses and programs in Biological and Allied Health sciences to meet the enrollment and evolving job demand.
- Maintain and improve an excellent learning environment for students to excel in their biological science courses.

- Maintain and improve collaboration, in relation to academic and student services, campus wide and external organizations.

**DEPARTMENT/PROGRAM 3-YEAR PLAN**

Department/Program Goal	Goal Status	Alignment with LAMC Strategic Master Plan/ Educational Master Plan goal(s), department/program SLOs/PLOs, and/or ILOs	Specific actions or activities (ongoing or planned) required to achieve this goal	Measurable outcomes/criteria indicating that each action or activity is complete, including target dates for completion	Briefly describe any obstacles to completing these activities or actions
<b>Goal 1. Establish AS Degree in Biology in accordance with Transfer Model Curriculum.</b>					
	TMC in BIO was just approved. We are in process of reviewing the curriculum.	Dept. Goal: Offering of new courses and programs in Biological and Allied Health sciences to meet the enrollment and evolving job demand	To modify the curriculum of the current AS Degree in Biology	The plan is to create and complete a new program on the ECD online system for the new TMC degree within the next two semesters.	None
<b>Goal 2a. Pursue certificate and/or degree program in Allied Health.</b>					
	Offering of Certified Nursing Assistant (CAN) and Home Health Aide (HHA) courses starting Fall 2015.  Possibility of offering pre-health and pre-medical Associate in Science degrees.	Dept. Goal: Offering of new courses and programs in Biological and Allied Health sciences to meet the enrollment and evolving job demand	The ECD for the CNA course has been approved. The approval for the HHA is pending.  Currently, the curricula of these degrees are being reviewed.	Both courses have to be approved by the California Department of Public Health. The target date to offer both courses is fall 2015 semester.  It is planned to complete an analysis within the next three years.	None  Budget
<b>Goal 2b. Pursue certificate and/or degree program in job-related Life Science.</b>					

	Exploring the offering of the "Lab Technician Assistant" certificate program.	Dept. Goal: Offering of new courses and programs in Biological and Allied Health sciences to meet the enrollment and evolving job demand	In collaboration with the CTE Dean, the market /Job demand analysis is being conducted.	Upon completion of the analysis the decision will be made. It is planned to complete this task by the fall 2015 semester.	Budget
<b>Goal 3. Explore additional course offerings in addition to (2) above.</b>					
	Offering of new courses, such as Introduction to Human Biology BIO 005.	Dept. Goal: Offering of new courses and programs in Biological and Allied Health sciences to meet the enrollment and evolving job demand	Based on SLO/PLO assessments and success/retention rates, the Department explores the offering of new courses. (The ECD for the new BIO005 has been approved. At this point, the articulation approval with UC/CSU is being pending.)	Ongoing (The new BIO005 course is planned to be offered in the fall 2015 semester.)	Budget
<b>Goal 4. Expand number of sections offered in current programs to meet growing demand.</b>					
	The department is in process of establishing an accelerated pre-health pathway.	Dept. Goal: Offering of new courses and programs in Biological and Allied Health sciences to meet the enrollment and evolving job demand	Based on retention and success data obtained from the courses offered in summer sessions, the department proposed an accelerated course offering that is currently being reviewed by the Academic affairs.	The plan is to start offering some courses in an 8-week format within the next two semesters.	Budget
<b>Goal 5. Work with STEM program to provide events with more UC/CSU collaboration.</b>					
	Ongoing collaboration	Dept. Goal: Maintain and	Student research projects	Ongoing	Budget to finance

	with research faculty at UCLA and CSUN.	improve an excellent learning environment for students to excel in their biological science courses. Dept. Goal: Maintain and improve collaboration, in relation to academic and student services, campus wide and external organizations.	with UC/CSU faculty.		faculty and student scholarships
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**2. In the space below, please describe your rationale (e.g., supporting data, information, reasoning, etc.) for your goal(s) described above.**

Goal 1: Current changes in the curriculum to make it transferable to CSUs.

Goal 2: Current demand in the job market.

Goal 3: Offering of new courses is based on analysis of student success and retention rates in addition to the SLO/PLO assessments in the current course offerings.

Goal 4: The offering of accelerated pre-health courses is based on student success and retention rates obtained from the courses offered during the summer sessions.

Goal 5: Student research contributes to student success and retention rates.

In addition, please provide answers to the following questions:

2. **(Mike)** Do the curriculum and scheduling of courses in your discipline provide a coherent sequential path in which your students' goals of transfer, graduation, and certificate completion can be realized in a timely manner? Please explain what data you use and how you make these evaluations.

The Department of Life Sciences offers two degrees, and at the present time, no certificates. Currently under development, and which will be housed in the department, is a program in Certified Nursing Assistant (CNA). This latter program is scheduled to begin offering classes in the Fall 2015 semester.

The two current degree programs are the AS in Health Science and the AS in Biology. With data collected by the office of the Dean of Institutional Research, there were 30 degrees awarded in Health Science and 7 degrees awarded in Biology in the most recent year for which data is available.

There are four specific courses that are required for the AS degree in Health Science. These courses include: Biology 3 (Introduction to Biology), Anatomy 1 (Introduction to Human Anatomy), Physiology 1 (Introductory Human Physiology and Microbiology 20 (General Microbiology). Every semester the following are offered: 14 sections of Biology 3; 6 sections of Anatomy 1; 4 sections of Physiology 1; and 4 sections of Microbiology 20. Each of these sections has a class limit of 30 students, thus, the total number of seats available each semester are: Biology 3 (420); Anatomy 1 (180); Physiology 1 (120) and Microbiology 20 (120).

Because of the laboratories that are involved in each course, none of these sections are offered during the Winter Intercession. When FTEF is available during the summer, the priority of course offerings are 1. Biology 3; 2. Anatomy 1; 3. Physiology 1; 4. Microbiology 20.

Every semester all of these sections close several weeks prior to the first day of class. An informal gathering of data from faculty shows the need for additional courses in all areas with the exception of Microbiology 20. In general, there is a need for additional sections of Biology 3, Anatomy 1 and Physiology 1.

Currently, there are ongoing discussions with the administration about the development of an Accelerated Pre-health Program. This program would consist of four of the most impacted courses offered over a two-semester period. Each course would be scheduled on an 8-week basis,

with Chemistry 51 and Biology 5 offered the first semester and Anatomy 1 and Physiology 1 offered the following semester. The department is currently gathering research data on the feasibility of such a program.

The four core courses for the AS in Biology are Chemistry 101 (General Chemistry I) and 102 (General Chemistry II) and Biology 6 (General Biology I: Cellular and Molecular Biology) and 7 (General Biology II: Evolutionary, Organismal and Ecological Biology). Each semester there are 2 sections each of Chemistry 101 and 102. In addition, one section each of Biology 6 and 7 are offered on a semester basis. It should be noted that it was relatively recently (past 5 years) that both biology courses were offered every semester.

In October of 2014, the Transfer Model Curriculum (TMC) for the transfer degree in Biology was released. One of the goals of the department within the next year is to modify the current AS degree in Biology to be aligned with the TMC.

3. **(Mike)** Has the curriculum kept pace with changes and developments in areas that would affect the program, e.g. university articulation requirements, developments in pedagogy, developments at other LACCD campuses, or requirements for commercial/industry skills? Briefly explain.

All of the courses in the Life Sciences have had their Course Outlines of Record updated within the past year. All of these courses (with the exception of Biology 33) are UC/CSU transferrable and have been articulated with the vast majority of UC/CSU campuses, most specifically those institutions in the general service area (UCLA, UC Riverside, CSUN and CSULA).

A major change that ensued in the past year was the institution of an English 28 prerequisite for all of the courses in the department with the exception of Biology 33 – Medical Terminology. The department will soon be gathering data on retention and success rates to measure any changes that may have occurred as a result.

As mentioned in Question #2, the department will embark on the development of a new TMC degree which, for the most part, is already aligned with the current AS degree in Biology with the exception of the addition of Calculus I (Math 265) and a basic physics sequence (Physics 1, 2, 3 or Physics 37, 38, 39).

It should also be noted that with the support of the STEM program at the college, one of the core components of a Life Sciences degree and Pre-medical option, Organic Chemistry, has been offered for the first time at the college. It is the intention of the Department of Physical Sciences to offer Organic Chemistry I and Organic Chemistry II at least once each year. Although these courses are not a requirement of the TMC, they are core courses for students seeking to transfer and earn a BA/BS in the Life Sciences.

4. **(Par)** Are the department's mission, goals, and objectives clearly articulated and communicated to faculty? Briefly explain how you involve your faculty in setting goals.

The faculty meet on a regular basis (3-4 meetings per semester) to discuss the goals and objectives. The minutes of these meetings are posted on the department's website. In addition, specific announcements are communicated via email.

5. **(Angela)** Does your department/discipline have an adequate procedure in place to determine whether it is meeting its instructional goals and objectives? Briefly explain this procedure and what data is collected to inform your analysis.

The department monitors the achievement of its instructional goals and objectives through three primary mechanisms:

**Assessment of Student Learning Outcomes and Program Learning Outcomes:** All life sciences faculty list course Student Learning Outcomes (SLOs) prominently in their syllabi and participate in the assessment process. Faculty also assess the Program Learning Outcomes (PLOs) for the Biology and Health Science associate degrees. All assessments and evaluations are posted on the College's online SLO/PLO system. These assessments have resulted in robust discussions that have led to instructional improvements and changes to the curriculum. Some of the major changes that have resulted from the SLO/PLO assessment process include:

- The establishment of an English 28 prerequisite in Fall of 2014 for most courses offered by the Life Sciences department
- Revision of the Biology 3 lab manual
- Revision of the Biology 3 final exam
- Development of a Human Biology (Biology 5) course

**Faculty Evaluation Process:** The department regularly evaluates all of its faculty to ensure that its instructional goals and objectives are met. The faculty evaluation process is thorough and comprehensive and includes classroom observations, student evaluations of faculty, and review of course materials such as syllabi, exams and quizzes. All faculty evaluatees meet with the department chair or their evaluation committee to review the findings and discuss strengths and areas where improvement may be necessary.

**Program Review Process:** A comprehensive program review process is conducted on a regular basis to evaluate enrollment, student retention and success, the number of degrees awarded, curriculum status and development, staffing, and facilities for all life science disciplines. The program review process also allows the department to request additional resources to help it meet its goals and objectives. These resources may include supplies, personnel, and facilities. The Dean of Research and Institutional Effectiveness provides data on student enrollment, success, and completion for the program review process.

The department faculty meet on a regular basis to discuss the results of the SLA/PLO assessment and the program review processes. The minutes for these departmental meetings are posted on the department Web site at <http://www.lamission.edu/lifesciences/Minutes.aspx>

6. **(Steve)** Describe the use of Social and/or instructional media, computers, and other technologies in your current program and any plans in this area for the coming year.

In the last several years, many instructors in the department have begun using the online course management system Etudes for their “brick and mortar” courses. At a minimum this provides instructors and students a communication system that is much more flexible and accessible than e-mail. For example, instructors can send announcements to the class that are stored and can be viewed by anyone in the course at any time. Students can send private messages to the instructor or each other. There is also a chat room in which students can communicate in real time with each other that the instructor can also use for a virtual office hour. Etudes also provides forums for questions and answers that can be viewed by the whole class. Another advantage of Etudes is a gradebook that provides students with access to their points and percentages throughout the course. Several instructors also take advantage of additional features in Etudes to provide convenient access to course and other online materials in addition to online testing and surveys. The department also offers several online courses which take advantage of the full range of resources available through Etudes.

Many instructors also use online publisher resources such as Mastering Biology to enhance instruction. These resources include a variety of questions, matching and drag and drop exercises, animations, case studies, etc., that can be used as homework, scored assignments or optional practice exercises. Instructors have the option of selecting materials from the publisher’s bank of exercises as well as inserting one’s own materials. Previously produced “courses” prepared by other instructors can also be copied and used for any given course. Through these resources students can also purchase access to the e-text.

Videos are also commonly used during instruction which are available from 3 resources – the publisher of the textbook or lab manual, freely available internet resources such as YouTube, and “in house” videos produced by the instructors themselves or through the Science Success Center funded by Title V and STEM grants. Such videos are routinely used during lecture to clarify difficult concepts such as cellular respiration and gene expression, and are also used on a regular basis during laboratories to demonstrate various lab techniques.

Two of the five life science laboratories in the new CMS building are equipped with a computer on each island such that there is one computer for each 4 or 5 students. These computers are an integral part of the laboratory instruction for anatomy and physiology and are occasionally used for majors biology courses. There currently is no computer lab available for use to allow students to do computer based exercises on an individual basis.

Other examples of technology and social media used for instruction by various instructors include Facebook, CCC Confer, and online tutoring through the Science Success Center. Students in all courses are also asked to use internet resources to investigate a variety of life science related topics. In addition, the majors biology courses use a variety of biotechnologies as an integral part of laboratory instruction.

In the coming year we plan to have more faculty certified in the use of Etudes so they can use Etudes to enhance their instruction. Ultimately we would like all faculty to use this course management system for all courses. As we have in the past, we also plan to arrange for workshops on the use of Pearson's Mastering Biology, Mastering Anatomy & Physiology, and Mastering Microbiology. There is currently a dedicated computer lab in the CMS building that to date has no computers. Once this lab is furnished we plan to develop laboratory exercises involving the use of the online databases to teach students how to access and analyze genetic information.

7. **(Steve)** How would you describe the morale and atmosphere within the department/program? How does your department/program promote collegiality among its faculty?

The morale and atmosphere within the Life Science department are excellent. The 4 full-time faculty in the department genuinely like and respect each other without exception. We interact on a regular basis and all collaborate with each other as needed to accomplish what needs to be done. Each full-time faculty member completes his/her responsibilities in a timely manner and there are no duties that anyone is unwilling or unprepared to accomplish. All full-time faculty, however, do feel overworked. The hiring of a new full-time faculty member this year will help alleviate the workload.

The adjunct faculty interact with the full-time faculty on a less frequent basis, however there are no signs of low morale in the adjunct faculty pool. In fact, several adjunct faculty have been very forthcoming in how much they enjoy teaching at Mission College. All full-time faculty are very responsive when contacted by e-mail or phone and rarely fail to respond within 24 hours. The same is true for most adjunct faculty though a few tend not to respond when contacted through their school e-mail account. This is something that needs to be addressed.

The department promotes collegiality primarily by meeting several times per semester and during intercessions to clarify what needs to be accomplished and to promote collaboration. In addition to regular faculty meetings, full-time faculty routinely socialize with each other by going

out to eat together, attending concerts, and occasionally socializing at each other's homes. All full-time faculty also have each other's phone numbers and call each other as needed to address departmental responsibilities or communicate for other reasons.

**You will be meeting with EPC to discuss your review on Friday, March 20, 2015.**