# Program Review
## For Cycle 2012-13 (2nd Year Group)

|------------------------|---------------------|-------------|---------|---------|
| **Astronomy:**         | Overall enrollment has remained roughly constant as we have changed our mix of single and double sections. The ethnic enrollment pattern has shown an increase of Hispanic/Latino students and a similar decrease of white students. Gender mix has stayed roughly constant at 50/50. | **Faculty:**  
  - Astronomy:  
    - The student success rate has increased from 30% to 47%. The success rate by gender is roughly 50/50. There are large variations in success rate of American Indian, Alaskan Native and Pacific Islanders, but on further inspection, this is simply because of statistical variation in a tiny sample size.  
  - Chemistry:  
    - The student success rate has increased from 65% to the mid 70% range, with a concurrent decrease in the percentage of withdrawals.  
  - Environmental Science:  
    - Geology:  
      - The student success rate has increased from 63% to 73%, with a decrease in withdrawals from 19% to 12%; perhaps reflecting a planned change in the teaching format employed by the geology faculty beginning in 2009-2010 (to a more inquiry based format) and we believe also to the  
  - Physical Geography:  
    - The student success rate has increased from 63% to 73%, with a decrease in withdrawals from 19% to 12%; perhaps reflecting a planned change in the teaching format employed by the geology faculty beginning in 2009-2010 (to a more inquiry based format) and we believe also to the  
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| **Chemistry:**         | Enrollment per section has remained constant; however the number of sections offered has decreased. Chemistry’s ethnic enrollment pattern has remained constant, with roughly 1/3 Asian, 1/3 Hispanic, and 1/3 White students, in contrast to the college wide ethnic distribution, which has a higher proportion of Black/African American students. **Environmental Science:**  
  - Geology:  
    - Overall enrollment has fluctuated over the last 3 academic  
  - Physical Geography:  
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**Goals**

- **Astronomy:**  
  - Goal: Hire FT ASTR instructor to replace retired Courtney Selignan – achieved with the hire (actually lateral transfer) of Mike MacCallum.  
  - Goal: Hire staff technician to maintain/program planetarium – did not happen.  
  - Goal: Fix numerous issues with planetarium dome and facility - did not happen.  
  - Goal: Replace roof top observatory or provide an alternative for storage and use of telescopes for ASTR 1L classes – did not happen.  
- **Chemistry:**  
  - Hire additional full time and adjunct faculty, so that we will be able to increase our class offerings to meet rising student demand.  
  - Continue efforts to maintain and update our laboratories and lab equipment.  
- **Environmental Science:**
  - Hire a new fulltime Geology instructor
years because of a faculty sabbatical (2009-10), and faculty serving as Academic Senate President (2011-12). Otherwise enrollment in Geology courses has remained constant; each course offered fills to maximum or near maximum enrollment.

Physical Geography:
Physical Geography remains the most popular course in the department. The enrollment pattern for the past 3 years has remained steady with an annual enrollment average of 1,379 students. This is the highest enrollment for any discipline in the Physical Science Department. Its popularity is due to the fact that it fulfills the natural science requirement on the general education plans A, B, and C so no matter what academic path a student takes the requirement is satisfied in all instances. WSCH 6-year average is 1,830.98. Estimated FTES 6-year average is 61.03.

Physics:
Enrollment in higher motivation of the students understanding and appreciating how tough it is to get the classes they need.

<table>
<thead>
<tr>
<th>Course</th>
<th>Status</th>
<th>Year</th>
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<tbody>
<tr>
<td>GEOL 1H</td>
<td>Completed 2012</td>
<td></td>
</tr>
<tr>
<td>GEOL 2</td>
<td>Completed 2012</td>
<td></td>
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<tr>
<td>GEOL 2F</td>
<td>In progress 2012</td>
<td></td>
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<tr>
<td>GEOL 2L</td>
<td>Completed 2012</td>
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<tr>
<td>GEOL 3</td>
<td>Because of budget restrictions, this course has not been offered since SLO’s were established.</td>
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</tr>
<tr>
<td>GEOL 3H</td>
<td>Because of budget restrictions, this course has not been offered since SLO’s were established.</td>
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<tr>
<td>GEOL 4</td>
<td>Completed 2012</td>
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<tr>
<td>GEOL 5</td>
<td>Because of budget restrictions, this course has not been offered since SLO’s were established.</td>
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<tr>
<td>GEOL 7AD</td>
<td>Completed 2012</td>
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<thead>
<tr>
<th>Course</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGEOG 1</td>
<td>Completed 2012</td>
</tr>
<tr>
<td>PGEOG 2</td>
<td>In progress – this is a new course and has only been offered for 2 semesters.</td>
</tr>
<tr>
<td>PHYS 2A</td>
<td>Completed 2012</td>
</tr>
<tr>
<td>PHYS 2B</td>
<td>Completed 2012</td>
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Physical Geography:
Research should be conducted to assess the incoming students ranking on assessment for reading and math and their final grade in the class. Are low assessment students having poor performance? If so at minimum suggested preparation for reading could be noted in the course catalog. A new transferable course “Weather and Climate” was offered for the first time in the spring of 2012 and again for fall starting the Fall 2013 semester to replace the retiring full time geology instructor. Focus on offering geology courses at our PCC campus with the same rigor as our courses at the LAC campus. In order to accomplish this we will need to set up the classroom with our new equipment, determine what is missing and needed and have full time faculty teaching at both campuses. Engage the PCC students in the breadth and depth of our geology program. We would like to have 10% of the PCC students taking Geology 1 enroll in one or more of our field courses and have 5 students working on an AS-T transfer degree in geology.
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physics has decreased from 345 students in 2009-2010 to 320 students in 2011-2012.
The enrollment pattern in Physics by gender has been almost constant with about 70\% male and 30\% female. The ethnic enrollment pattern in Physics has changed a lot over the last few years with a big increase in Hispanic students and a decrease in White students. The enrollment of Asian students has been almost constant. Black/African American enrollment has been very low.

525, the 6-year average program load for Physical Geography is 650 with a max as high as 694.

**Physics:**
The student success rate had decreased from 46.96\% in 2009-2010 to the 37.50\% in 2010-2011. But, it went up again to 47.50\% in 2011-2012.

**PHYS 3A**
In progress – only adjunct instructors are currently teaching the course and the department is still considering assessment options.

**PHYS 3B**
Completed 2012

**PHYS 3C**
Completed 2012

2012. It has proven to be a popular physical science course with each section having waitlisted students. Completion of the build outs at the PCC campus has permitted new section offerings of Physical Geography at that campus for spring 2013. In addition a new Physical Geography Lab is in curriculum review and is projected to be offered no later than the fall of 2013. This lab will complement other lab offerings in the Physical Science Department and will align LBCC with similar courses at neighboring community colleges.

**Physics:**

6. College Wide

**Overall – How does this information fit with the College Wide Goals?**
The mission of the Physical Science Department to provide transferrable science courses matches the college goal of increasing the number of students transferring to 4 year schools. All of our courses are accepted by the UC and CSU systems as meeting the physical science requirement for transfer. We serve a diverse student population. The Black/African American population is the only under-represented ethnic group in our classes.

The purpose of Program Review is to summarize and interpret the data and information collected from the resources listed above, reflecting how your department program(s) have been successful and incorporated the information into improvements, where necessary. As a part of the overall college planning process, a meaningful Program Review will be the primary document CPC and other college committees will rely on for qualitative and quantitative information on a program, informing enrollment management, budgeting (cap outlay, grants), hiring priorities, and accreditation.

The questions below are designed to help you create, primarily, a narrative review (roughly 5-10 pages). Each question includes the “Feedback Rubric Prompts” that will be used by the committee to read, reflect, and
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provide feedback on your Program Review; please use these to guide the formulation of your responses. Each program (curriculum guide) within your department requires a separate Program Review Document.

Program Review Questions

Name of Program being reviewed: **PHYSICAL SCIENCE**

1– 3. Enrollment, Achievement, and HR Data

Summarize and interpret the data for each of the first three above as they relate to your program.

**Response:**

All IGETC transfer programs require at least one Physical Science class. Many students cannot transfer as planned because they are unable to get into any of our more popular classes. Many students are not able to continue their planned course of study in a timely fashion because they are not able to finish the science courses which are prerequisites for other courses such as BIO 1A that they need for their major. Our goal to increase the number of offerings is designed to eliminate these bottlenecks. Specific areas of concern:

**Astronomy:**
The enrollment has stayed roughly level. The ethnic mix has changed with an increase in Hispanic/Latino and a similar decrease in White students. This simply mirrors what is happening across the entire college. The student success rate has increased from 30\% to 47\%. This is lower than the college average, but certainly represents that the large majority of students taking astronomy courses are not performing at the college level in reading or writing. The success rate roughly matches with our SLO assessment. All gender and ethnic groups showed increased success (with the exception of variations due to tiny sample size for one small ethnic group.)

We have added one full time faculty member, and have adjusted part time faculty numbers as needed. We have done away with summer astronomy offerings. Both of our astronomy instructors are teaching overloads and both intend to retire at the end of the spring 2013 semester. They should be replaced immediately to maintain continuity. In addition they maintain the planetarium equipment and would train replacement faculty. Astronomy has the second highest number of enrolled students of our disciplines.

**Chemistry:**
The number of class offerings within the department has been reduced because of the decrease in the number of adjunct faculty, due to decreased funding. This reduction in the number of classes has resulted in increased numbers of student on the wait lists for our classes. The number of full-time faculty has remained constant, but there has been a significant reduction in the numbers of adjunct faculty. This has affected the ongoing mission of the department which has been to offer a sufficient number of classes to meet student demand. We need additional staff to offer the additional classes needed.

**Environmental Science:**
The number of class offerings within the department has been reduced because of the decrease in the number of adjunct faculty, due to decreased funding. This reduction in the number of classes has resulted in increased numbers of student on the wait lists for our classes.

**Geology:**
Enrollment in Geology courses has remained constant; each course offered fills to maximum or near maximum enrollment. We have not been able to offer many of our courses on a regular basis because we do not have enough faculty members to cover them. Our faculty members have full teaching loads just by offering the needed number of sections of the basic courses.

**Physical Geography:**
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Physical Geography remains the most popular course in the department. The enrollment pattern for the past 3 years has remained steady with an annual enrollment average of 1,379 students. This is the highest enrollment for any discipline in the Physical Science Department.

Physics:
So far the single full time and the two adjunct faculty members have been able to offer all the necessary classes to almost meet the demand, but as the demand for STEM core classes increases, they will not be able to do so. Our PHYS 3A course is being taught by adjunct instructors. This basic course for science/engineering majors should have a full time faculty member teaching/overseeing the course to maintain standards.

\textit{Feedback Rubric Prompts:}
\begin{itemize}
  \item How has the program explained their data for the columns 1-3 (enrollment, achievement, staffing)?
  \item Was the content concise yet sufficiently in depth?
  \item Was there sufficient detail to understand their point?
  \item Were the data effectively related to trends in student access and performance during the review cycle? If there were anomalies in the data, were they adequately explained?
  \item Did the review explain how the staffing structure (including full-time to part-time ratio of faculty) has affected, positively or negatively, the program's ability to fulfill its mission and goals?
\end{itemize}

4. SLOs

\textbf{a) Summarize the collected program data}

\textbf{Response:} In general, our assessments show that our students are learning more of the information presented in their classes and applying it to evaluating the technologic society they live in. Our initial plan was to assess SLO’s in selected sections of each discipline in order to evaluate the validity our assessment methods and then make the necessary adjustments before using these methods for all of the sections in a discipline. Since most of our course assessments were scheduled to begin in 2011-12, we do not have much data to work with.

The program assessment has been especially troublesome, because of the wide diversity of our disciplines. We think we have developed a set of questions to assess our success at reaching our objectives across all of our disciplines. We are putting them into effect this semester.

\textit{Feedback Rubric Prompts:}
\begin{itemize}
  \item How has the program explained their SLO data (class and program level)?
  \item Were changes and responses made to the courses and/ or program as a result of the data analysis?
\end{itemize}
b) Based on analysis of course and program SLO assessment:

- How are program-level and course-level SLOs being implemented, assessed, and used for program improvement?

**Response:**

We are making every effort to meet the codification and assessment of SLO’s as the requirements are being formulated and reformulated by administrators. But as professionals in our fields, we have a very good knowledge of the standards our students should meet and we have been enforcing and measuring (assessing?) our students’ success at attaining those goals for more than 40 years. We do not have to write these down in a series of prompts and responses to decide if we have succeeded.

- Summarize how the program has responded to SLO assessment results.

**Response:**

We have noticed a marked improvement in our student success rates when additional resources such as SI (supplemental instruction) and tutoring are available. We strongly support and lobby for funding for these areas.

- Discuss how each action/change is based on ASLO results and how it will contribute to the improvement of the program.

**Response:**

Since there are long established norms for the material to be taught in the physical sciences, SLO’s will have little impact on course objectives. The only areas impacted by SLO assessment are teaching techniques, and our faculty utilizes and evaluates new techniques and tools as they become available.

**Feedback Rubric Prompts:**

Do you feel that you have an understanding of how the program has used their SLO data for program improvement?

5. Goals

a) Based on the data from questions 1 – 4 and any other relevant internal or external data your department has collected, how have your department and program goals developed and changed over the past three years?
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Response:

Our current goals have not changed from those of the past. We still want to provide the maximum number of classes for our students with no one having to be wait-listed.

b) Discuss the steps you have taken to address each goal. What have been the results of these efforts?

Response:

Our strategies in the past and now have been to hire enough staff to offer the needed number of classes. We have not been successful in reaching those goals.

c) Based on the new data collected (4), what are your plans for change in the future?

Response:

Our program plans do not need to be changed. What we need is the funding to implement them.

Feedback Rubric Prompts:
Describe what appears to have contributed significantly to the program's plan development for the past three years.

- Do they have a vision?
- Have the data from questions 1-4 (of the program review template) informed their planning?

6. College Wide

Discuss how the program SLOs as well as the department goals integrate, articulate, and complement the institutional goals and initiatives. (How does your department fit into the big picture?)

Response:

Our goals to increase the number of our class offerings and the number of students earning Associate’s degrees exactly matches the College Mission to increase the number of LBCC students transferring to 4 year schools. Most of our students are taking our courses to fulfill their transfer requirements.

Feedback Rubric Prompts:
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Do you have a clear idea of how their program supports institutional goals?

- Did they reference the institutional goals and mission?
- How does their Program Review give you a clear idea of how their program fits into the college mission?