



# Annual Program Review 2011-2012 - INSTRUCTIONAL

## Division - Program

### PHYSICAL SCIENCES-Astronomy

#### Authorization

After the document is complete, it must be reviewed and submitted to the Program Review Committee by the Division Chair.

Author: Jennifer Krestow  
 Division Chair: Rick Guglielmino  
 Date Received by Program Review: November 8, 2011

#### Overview of the Program

*All degrees and certificates are considered programs. In addition, divisions may further delineate and define programs based on their assessment needs (developmental sequences, career track, etc).*

**Statement of Purpose** – briefly describe in 1-3 sentences.

The purpose of the astronomy program is to provide students with the physical sciences general education courses for those seeking to get an AA degree.

Please list the **most significant achievement** accomplished since your last program review.

The most significant achievement accomplished since the last program review is the semester meetings between the full time astronomer and adjunct astronomers in order to streamline and standardize the astronomy education at Glendale College.

List the current major strengths of your program

1. The planetarium is a phenomenal astronomy teaching tool and all classes have the opportunity to see planetarium presentations over the course of the semester.
2. We have a very high level of talent that comes to teach at Glendale from JPL, Caltech, and neighboring universities.
3. The internships for GCC students, both in the planetarium and at JPL, give our students wonderful experiences they cannot receive anywhere else.

List the current weaknesses of your program

1. The continuity of quality instruction is often broken since the astronomy adjunct instructors often can only teach for a few semesters before their careers take them elsewhere.

## 1.0. Trend Analysis

For each program within the division, use the data provided to indicate trends (e.g., steady, increasing, decreasing, etc.) for each of the following measures.

Program	Academic Year	FTEF Trend	FTEF Trend	WSCH / FTEF Trend	Full-Time % Trend	Fill Rate Trend	Success Rate Trend	Awards Trend
ASTRONOMY	2007-2008	74	4.0	586	40.0%	89.6%	60.7%	0
	2008-2009	63	3.2	630	50.0%	104.2%	64.8%	0
	2009-2010	65	3.2	651	37.5%	100.4%	64.7%	0
	2010-2011	52	3.8	439	57.9%	98.8%	63.4%	0
	% Change	-28.7%	-5.0%	-25.0%	+44.7%	+10.3%	+4.6%	--
	4-Yr. Trend	decreasing	stable	decreasing	increasing	increasing	stable	increasing
CHEMISTRY	2007-2008	472	28.2	534	49.3%	89.5%	68.9%	0
	2008-2009	477	28.9	609	57.4%	107.7%	67.6%	0
	2009-2010	531	26.1	647	51.9%	110.8%	68.5%	0
	2010-2011	453	28.0	515	49.3%	104.3%	67.2%	0
	% Change	-4.0%	-0.6%	-3.4%	-0.0%	+16.5%	-2.5%	--
	4-Yr. Trend	stable	stable	stable	stable	increasing	stable	increasing
GEOLOGY/ Oceanography	2007-2008	176	8.4	668	54.8%	85.8%	70.1%	0
	2008-2009	208	8.0	826	32.5%	102.4%	73.1%	0
	2009-2010	215	8.2	834	39.0%	103.5%	67.4%	0
	2010-2011	196	10.1	618	34.0%	110.5%	69.1%	0
	% Change	+11.4%	+20.2%	-7.4%	-37.9%	+28.9%	-1.4%	--
	4-Yr. Trend	increasing	increasing	stable	decreasing	increasing	stable	increasing
PHYSICAL SCIENCE	2007-2008	22	1.6	439	0.0%	100.0%	72.6%	0
	2008-2009	6	0.4	457	100.0%	104.2%	72.0%	0
	2009-2010	0	0.0	--	--	--	--	0
	2010-2011	0	0.0	--	--	--	--	0
	% Change	-100.0%	-100.0%	--	--	--	--	--
	4-Yr. Trend	decreasing	decreasing	increasing	increasing	increasing	increasing	increasing
PHYSICS	2007-2008	89	5.8	488	86.2%	70.7%	72.3%	0
	2008-2009	95	5.6	541	85.7%	78.4%	68.7%	2
	2009-2010	111	5.4	653	55.6%	92.2%	73.9%	0
	2010-2011	109	7.3	473	55.4%	93.1%	70.4%	1
	% Change	+22.4%	+26.4%	-3.2%	-35.7%	+31.6%	-2.6%	--
	4-Yr. Trend	increasing	increasing	stable	decreasing	increasing	stable	increasing
PHYSICAL SCIENCES DIVISION TOTAL	2007-2008	833	48.0	553	52.3%	86.2%	68.5%	0
	2008-2009	849	42.1	641	56.3%	101.3%	69.6%	2
	2009-2010	922	42.9	684	48.8%	104.3%	68.2%	0
	2010-2011	811	49.2	524	47.7%	103.7%	68.0%	1
	% Change	-2.7%	+2.6%	-5.2%	-8.7%	+20.3%	-0.8%	--
	4-Yr. Trend	stable	stable	stable	stable	increasing	stable	increasing

1.1. Describe how these trends have affected student achievement and student learning:

The Astronomy classes have excellent fill rates, long waitlists (usually 20 or more) and increasing success rates. This speaks to the strength and quality of the instruction within the astronomy department.

1.2. Is there other relevant quantitative/qualitative information that affects the evaluation of your program?

The planetarium is universally loved, and many students try to bring friends to lectures for the experience. For the GCC community, the astronomy department has instituted the "Afternoon with the Stars" presentation series to showcase the planetarium and help students and faculty alike to better understand the Universe they live in. In addition to the planetarium, we have the honors astronomy class(es) every fall to satisfy the scholars program requirements. Finally, we have a strong relationship with JPL through the SIRI Program.

## 2.0. Student Learning and Curriculum

Provide the following information on each department and program within the division.

List each Department within the Division as well each degree, certificate, or other program* within the Department	Active Courses with Identified SLOs		Active Courses Assessed		Course Sections Assessed		If this area has program outcomes have they been assessed? Yes or No
	n/n	%	n/n	%	n/n	%	
ASTRONOMY	3	100	2	66	All sections	100	No program outcomes have been written

2.1. Please comment on the percentages above.

Every semester a different course is selected to have one or more SLO for that course assessed. All sections of that course assess their students understanding as pertaining to that SLO.

- 2.2. a) Please provide a **link**\* to all program assessment timelines here. This link could be to your division /department website, eLumen, etc.  
 b) Briefly summarize any pedagogical or curricular elements of courses/programs that have been changed or will be changed as a result of developing assessment timelines and course/program alignment matrixes.  
 c) Based on the program assessment timelines you have developed and the evidence you have gathered, please comment briefly on how far along your division/program is in the assessment process.

A) The assessment timelines can be accessed at:

<http://www.glendale.edu/index.aspx?page=5003>

B) The discussions among the astronomy faculty have identified common areas of concern and provided valuable opportunities for learning from one another in order to better explain some of the more complex topics to our students. The need for more hands on activities and demonstrations was noted and simple equipment was purchased to facilitate these activities and demonstrations.

C) We are in the beginning stages of assessing our program.

- 2.3 a) Please provide a **link** to any program and/or relevant course assessment reports. Does the evidence from assessment reports show that students are achieving the desired learning outcomes?  
 b) Please briefly summarize any pedagogical or curricular elements of courses and/or programs that have been changed or will be changed as a result of the assessments conducted.

A) As we are in the beginning stages of assessment, no conclusive evidence of improvement has been observed as of yet, although the students do seem to enjoy the demonstrations and activities.

B) Additional demonstrations and in class activities/collaborative work sessions seem to help the students. Also, math worksheets to help the students practice the math before formal assessment has really improved that aspect of the courses.

2.4 Please list all courses which have been reviewed in the last academic year.  
 Note: Curriculum Review is required by the Chancellors Office every 6 years.

Astronomy 102 (Astronomy Laboratory) and Astronomy 110 (Solar System Astronomy) have been reviewed within the last year. Astronomy 120 (Stars and Galaxies) will be reviewed this year.

2.5 Please list all degree/certificate programs within the division that were reviewed in the last academic year.

The only degree/certificate program in the division is the Physics Sciences AA. The PSLO for this has just been updated but the program has not been reviewed yet.

2.6 For each program that was reviewed, please list any changes that were made.

N/A

**3.0. Reflection and Action Plans**

3.1 What recent activities, dialogues, discussions, etc. have occurred to promote student learning or improved program/division processes?

- A) In the October 2011 division meeting there was a discussion on testing methods and a presentation on education research about testing methods was introduced.
- B) The division is planning on retreat for the purpose of discussing pedagogical practices in the Winter 2012 Session.
- C) Two full time instructors, in geology and astronomy sat down on October 24<sup>th</sup>, 2011 to go over individual tests to offer suggestions for improvement.
- D) Semester meetings in astronomy with all instructors present help refine pedagogical techniques.

3.2 Using the weaknesses, trends and assessment outcomes listed on the previous pages as a basis for your comments, please briefly describe your plans and/or modifications for program/division improvements

Plans or Modifications	Anticipated Improvements
Hire a second full time astronomer	By hiring another full time astronomy or astronomy/physicist, continued and consistent high quality instruction can be assured.
Add additional sections	Due to the continued success of the planetarium, more students are interested in taking astronomy and more sections are needed to meet this demand.

**2011 PROGRAM REVIEW**

**PHYSICAL SCIENCE:**  
**FT Astronomy Instructor**  
*(80% Astronomy/20% Physics)*

**I: PS.Ast-1**

## Section 4

### IHAC Request

If this is a repeat request, please list the Resource ID code or year requested: \_\_\_\_\_

**4.1** The Office of Instruction will provide data on instructional hires during the past five years, including the full-time percentage of each new hire.

a) Number of full-time faculty currently assigned to the Program		1
b) Number of full-time faculty assigned to the Program in 2005		1
c) Does this position cover classes currently taught by adjuncts? Yes or No		Yes
c) Does this position contribute to program expansion? Yes or No		Yes

**4.2** CPF Index (Committees Per Full-time Faculty)

1. Total number of full-time faculty members in this department/program.	1
2. Total number of committees in which all FT faculty members in this area participate (Governance and other campus related committees & participation).	2
3. CPF INDEX (Total of # 2 divided by #1)	2

**4.3** Status of Released Time Faculty

Faculty Name	Release Time Position	% RT	Term of Assignment
Dr Jenny Krestow	Planetarium director	50%	permanent

**4.4** How does this assignment relate to the college's Mission Statement?

The college's Mission statement includes "providing a rich and rigorous curriculum that helps students understand and appreciate the artistic and cultural heritage of this society, the history and development of civilization, the scientific environment in which they live, and the challenges of their personal lives." Basic Astronomy courses certainly includes many of these goals and hiring an additional astronomer and being less dependent on adjuncts will make it more likely we will achieve these goals.

**4.5** How does this position relate to the objectives and functions of the college?

- |  |                              |
|--|------------------------------|
| a) Associate Degree                    | d) Basic Skills development  |
| b) Transfer to a four-year institution | e) Noncredit Adult Education |
| c) Career and Technical Education      | f) Personal enrichment       |

Most students take Astronomy to fulfill a science requirement for the AA or to meet transfer requirements to a 4 year institution. Hiring another fulltime person will make us less dependent

on adjuncts and this should improve our success rate and cause more students to get an AA and transfer to a 4 year institution.

**4.6** Describe how this position enhances student success. Ex: enhances instructional skills, meets community or industry needs, contributes to state of the art technical education, etc. What measureable outcome will result from filling this request?

**4.7** Are there anticipated negative impacts for not hiring this position? If so describe

Without another fulltime person , the quality of teaching in astronomy will decline as adjuncts cycle in and out of the program . Many things the Astronomy Department could do will not be achieved. The department has had offers to work with the K-12 and the Cal States and to work more closely with JPL and the womanpower has not been available.

**4.8** Are there any other special concerns not previously identified? If so, please explain.

The one fulltime person (Dr Krestow who has 50 % release time for running the planetarium ) **cannot do everything** required to run a complex department. that oversees the planetarium and all of its interactions with the college, the community, and the outreach to the elementary schools , and teaches 4 courses including a lab, must maintain all equipment ( without a technician), must oversee ( along with the Division chair) the hirings and firings of adjuncts, work closely with JPI, and must develop new courses and teaching methodologies. It is not possible for one person to do all this in a professional manner.

Because of this difficulty, we are asking for a permanent position that would be 80% Astronomy and 20 % physics.

Having another fulltime person in the astronomy department, will insure that more classes are taught by fulltime permanent teachers who have the commitment to provide an outstanding educational experience to our students and use the tremendous teaching tool ( the planetarium) available in the astronomy department.

We have had a problem with high turnover of adjuncts . Many of them have cut educational corners and not been rehired. Most of them do not have the time or motivation to spend the significant time required to use the planetarium in their courses.

We feel it likely that with another fulltime person that our success rate will increase, the use of the planetarium will grow , and our courses will be taught more professionally.

**APPROVALS**

<b>AGENCY</b>	<b>DECISION</b>						
The Program Review Committee has reviewed the data, outcomes and plans in the report and finds this request to be:  <p style="text-align: center;"><b>NA</b></p>	Well supported						
	Adequately supported						
	Not supported						
	Reason:	Sect.1: Data		Sect.2: SLOs		Sect.3: Plans	Other:
Standing Committee Review of Resource Request <b>Committee: Academic Affairs</b>					Prioritization Score		