Part 2 – Comprehensive Program Review **Fall 2010**

Program Name: Physical Science

A. PAST: Review of Program Performance, Objectives, and Outcomes for the Three Previous Academic Years: 2007-08, 2008-09, 2009-10

1. List the objectives developed for this program during the last comprehensive program review.

There were no program-specific past objectives identified in the last comprehensive program review.

2. Present program performance data in tabular form for the previous three years that demonstrates the program's performance toward meeting the previous objectives. Include the following standard program performance metrics as well additional program specific metrics, if any.
   a. For teaching programs this data should include at least the following: Enrollment at census, number of sections, fill rate, retention rate, success rate, and grade distribution for each course in the program, during each semester and session of the previous three academic years. In addition, the Full Time Equivalent Faculty (FTEF) and Full Time Equivalent Students (FTES) and the ratio of FTES per FTEF should be presented for the program for each semester and session.

Data are presented in tabular form in separate file.

3. Present student learning or service area outcomes data that demonstrate the program's continuous educational and/or service quality improvement. Include the following standard information and metrics as well as additional program specific metrics, if any.
   List the program level outcomes, goals or objectives and show how these support the Institutional Student Learning Outcomes. Identify the method(s) of assessment used for each of the program level outcomes. Provide a summary of the outcome data for the program, including course and program level data as appropriate.

There are currently no program-level SLOs for the General Science and Physical Science majors.

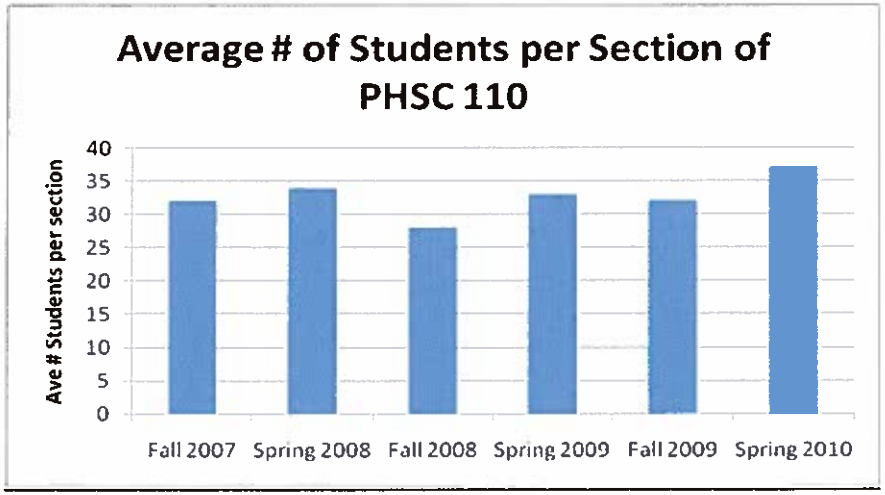
An initial set of Student Learning Outcomes have been identified for PHSC110:

SLO #1: Comprehend and apply the principle of Conservation of Energy to simple machines, e.g. levers.
SLO #2: Conceptualize the fundamental difference between mass and weight and between speed and velocity, using illustrative examples.
SLO #3: Distinguish between series and parallel circuits, identifying their advantages and disadvantages.

Assessment of these SLOs are based primarily through exam questions.

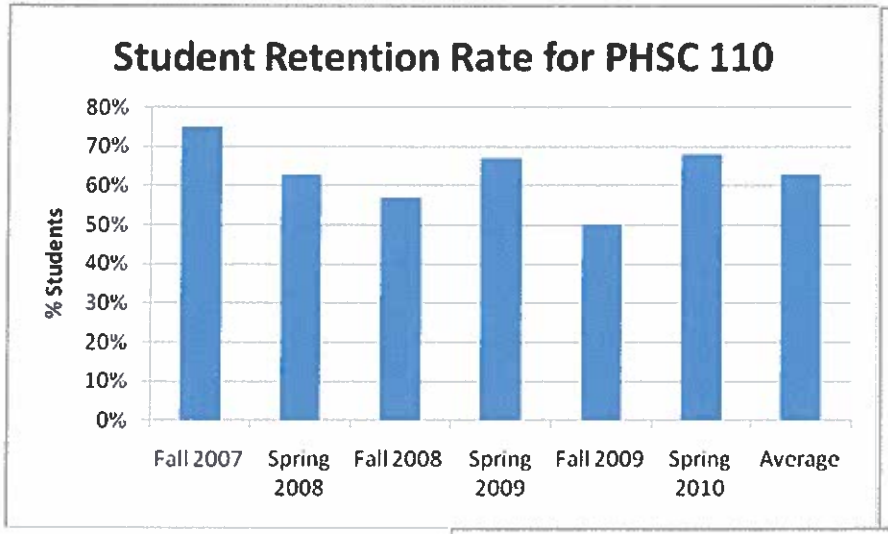
4. Analyze the data presented visually (graphs, diagrams, etc.) and verbally (text) as appropriate, present any trends, anomalies, and conclusions. Explain the program's success or failure in meeting the objectives presented above in item one. Explain the ways that the program utilized the student learning or service area outcome data presented in item three to improve the program (changes to curriculum, instructional methodology, support services, etc.)

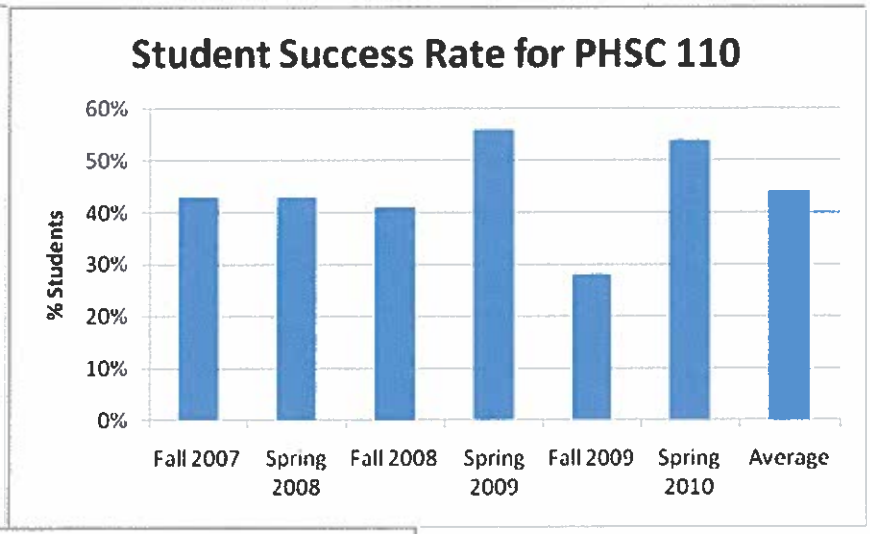
Enrollment & Access

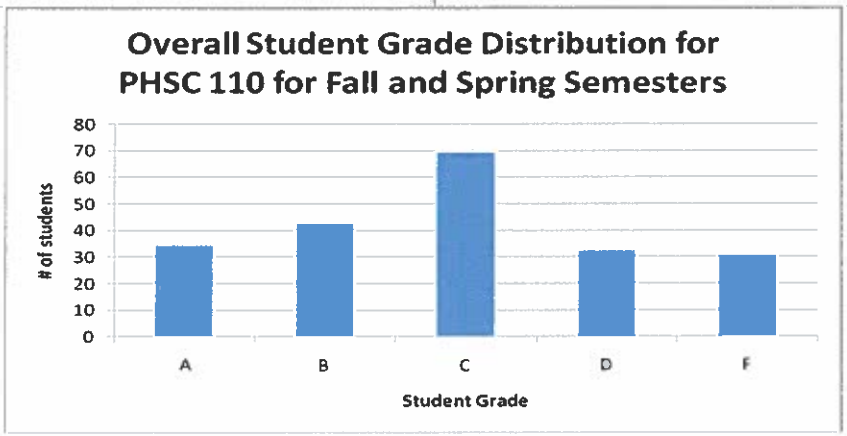


The offered sections (one or two per semester) have a student cap of 35 per section average a 90% fill rate. Only in one semester in which only one section was offered (Spring 2010) was it necessary to exceed the course cap of 35. Overall, we are presently meeting the student demand for this course, especially during the semesters in which two sections are being offered. There is not the demand or need to increase the number of sections offered at the present time.

Retention and Student Success







The Student Retention and Student Success Rates average 63% and 44% respectively, with the Fall 2009 semester being below the norm. A significant number of students remain enrolled in the course despite having a non-passing grade as PHSC110 satisfies the Liberal Studies requirement and hope for the best or remain enrolled to secure financial aid benefits for the semester. During the previous 3-year period, a total of 145 passing grades (A – C) were given with 34 A grades (23% of passing grades) and 42 B grades (29% of passing grades). Those students willing to make the effort can succeed. While there are no prerequisites for PHSC110, passing MATH90 with a grade of C or better is recommended. Yet, a number of students lacking the necessary math skills as well as study skills enroll in the course and are unable to complete the course work at the necessary level for success and find it necessary to withdraw from the class.

B. PRESENT: Snapshot of the State of the Program in the Current Semester: Fall 2010

1. Give a verbal description of the program as it exists at the present time. Include information on current staffing levels, current student enrollments, student learning or service area outcome implementation, number of majors, and/or other data as appropriate.

Typically, there are two sections of PHSC110 offered each semester, though this is sometimes limited to one section based on the schedules of the faculty members responsible for teaching PHSC110. There are two faculty members presently teaching PHSC110, but both of these faculty members teach primarily in other subject areas (physics/math and astronomy). It is based on the scheduling of courses in these other areas that result in only one section being offered in a given semester. The present course offering schedule is sufficient to meet the student demand.

2. Verbally describe any outside factors that are currently affecting the program. (For example: changes in job market, changing technologies, changes in transfer destinations, etc.)

None at this time.

3. List any significant issues or problems that the program is immediately facing.

The classroom in which PHSC110 is taught, while being a lab room, is also used for non-science classes. The scheduling of other classes in this room, especially in the time period just before the PHSC110 sections, makes setting up demonstrations and experiments difficult. This problem would be more serious if a lab section is developed for this course.

C. FUTURE: Program Objectives for the Next Three Academic Years: 2010-11, 2011-12, 2012-13

1. Identify the program objectives for the next three academic years, making sure these objectives are consistent with the college's Educational Master Plan goals. Include how accomplishment is to be identified or measured and identify the planned completion dates. If any objectives are anticipated to extend beyond this three-year period, identify how much is to be accomplished by the end of this review period and performance measures.

#1. The development of a laboratory component to PHSC 110. Possible implementation during the 2013-14 academic year. The accomplishment of this goal will be identified by the presence of a laboratory section for PHSC 110. (Educational Master Plan Goal #1)

#2. Improved coordination and consistency of the level of instruction for the different sections of PHSC110 taught by the different instructors. This goal should be accomplished during the 2011-12 academic year. This will be measured by looking at student grade distributions. (Educational Master Plan Goal #2)

#3. Approval from the Academic Services of IVC to ensure that the room used for PHSC110 is available to the instructors during the time periods prior to the sections of PHSC110. This goal should be accomplished during the 2011-12 academic year. The accomplishment of this goal will be identified by examining the room schedule each semester. (Educational Master Plan Goal #3)

2. Identify how student learning or service area outcomes will be expanded and fully implemented into the program. Include a progress timeline for implementation and program improvement.

Student Learning Outcomes identification and assessment schedule for PHSC110:

Fall 2011	Assessment of SLO #1 completed (data from Spring 2011 semester). Data collected for SLO #2 analysis. SLO #4 identified
Spring 2012	Implementation of instructional changes based on assessment of SLO #1. Assessment of SLO #2 completed. Data collected for SLO #1 second assessment. Data collected for SLO #3 analysis.
Fall 2012	Implementation of instructional changes based on assessment of SLO #2. Data collected for SLO #2 second assessment. Data collected for SLO #4 analysis. Assessment of SLO # 1 and SLO #3 completed. SLO #5 identified
Spring 2013	Implementation of instructional changes based on assessment of SLO #1 and #3. Data collected for continued assessment of SLO #1. Data collected for SLO #3 second assessment. Assessment of SLO #2 and SLO #4 completed.
Fall 2013	Implementation of instructional changes based on assessment of SLO #2 and SLO #4. Data collected for continued assessment of SLO #2. Data collected for SLO #4 second analysis. Data collected for SLO #5 analysis. Assessment of SLO # 1 and SLO #3 completed. SLO #6 identified
Spring 2014	Implementation of instructional changes based on assessment of SLO #1 and #3. Data collected for continued assessment of SLO #1 and #3. Continuing assessment of SLO #2 and SLO #4 completed. Initial assessment of SLO #5 completed.

We plan to develop program-level SLOs for the General Science and Physical Science majors in the 2010-2011 academic year. SLOs will be implemented in the Fall 2011 semester, and data will be analyzed and used for improvements.

3. Identify any resources needed to accomplish these objectives. Identify any obstacles toward accomplishment and the plan to surmount these obstacles.

For goal #1 the major constraint will be time required from the instructors. This is not a serious obstacle as the laboratory section will not be implemented until at least the 2013-14 academic year. There may also be financial restraints for purchasing the equipment needed for the laboratory section.

Meetings with the department chair will be necessary to accomplish goals #2 and #3.

4. Identify any outside factors that might influence your program during the next three years.

Any changes in the Liberal Studies curriculum, though none are foreseen at this time, would affect the course enrollment.

Program Review - Physical Science Program
Enrollment Count at Census

	Fall				Spring				Summer				Winter				Grand
Course	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	Total
PHSC 110	64	55	32	151	68	65	37	170									321
Total	64	55	32	151	68	65	37	170									321

Physical Science Program
Number of Sections

	Fall				Spring				Summer				Winter				Grand
Course	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	Total
PHSC 110	2	2	1	5	2	2	1	5									10
Total	2	2	1	5	2	2	1	5									10

Physical Science Program
Average Number of Students per Section

	Fall				Spring				Summer				Winter				Grand
Course	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	Total
PHSC 110	32	28	32	30	34	33	37	34									32

Avg.	32	28	32	30	34	33	37	34									32

Physical Science Program
Student Success Rate

Course	Fall				Spring				Summer				Winter				Grand Total
	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	
PHSC 110	43%	41%	28%	37%	43%	56%	54%	51%									44%
Avg.	43%	41%	28%	37%	43%	56%	54%	51%									44%

PHSC
Student Retention Rate

Course	Fall				Spring				Summer				Winter				Grand Total
	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	
PHSC 110	75%	57%	50%	61%	63%	67%	68%	66%									63%
Avg.	75%	57%	50%	61%	63%	67%	68%	66%									63%

Grade Distribution

Program	Term	Sem.	Yr.	Course	A	B	C	D	F	CR	P	Other	W	Total	Success Rate	Retention Rate

PHSC	200810	Fall	2007	PHSC110	5	3	19	11	9			0	16	63	42.9%	74.6%
PHSC	200820	Spr.	2008	PHSC110	7	12	10	8	6			0	25	68	42.6%	63.2%
PHSC	200910	Fall	2008	PHSC110	6	8	9	2	7			0	24	56	41.1%	57.1%
PHSC	200920	Spr.	2009	PHSC110	11	9	17	4	3			0	22	66	56.1%	66.7%
PHSC	201010	Fall	2009	PHSC110	1	3	5	4	3			0	16	32	28.1%	50.0%
PHSC	201020	Spr.	2010	PHSC110	4	7	9	3	2			0	12	37	54.1%	67.6%

Physical Science Program
Full Time Equivalent Student (FTEs)

	Fall				Spring				Summer				Winter				Grand
Course	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	Total
PHSC 110	6.6	5.7	3.3	15.6	7.0	6.7	3.8	17.6									33.3
Total	6.6	5.7	3.3	15.6	7.0	6.7	3.8	17.6									33.3

Physical Science Program
Full Time Equivalent Faculty (FTEf)

	Fall				Spring				Summer				Winter				Grand
Course	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	Total
PHSC 110	0.40	0.40	0.20	1.00	0.40	0.40	0.20	1.00									2.00

Total	0.40	0.40	0.20	1.00	0.40	0.40	0.20	1.00									2.00

Physical Science Program
FTEs per FTEf

	Fall				Spring				Summer				Winter				Grand Total
Course	2007	2008	2009	Total	2008	2009	2010	Total	2007	2008	2009	Total	2008	2009	2010	Total	
PHSC 110	16.6	14.2	16.6	15.6	17.6	16.8	19.2	17.6									16.6
Avg.	16.6	14.2	16.6	15.6	17.6	16.8	19.2	17.6									16.6