

**CENTRAL NEW MEXICO COMMUNITY COLLEGE**  
**ASSESSMENT REPORT-Part I**  
**Assessment Data Results**

The purpose of this form is to provide a written summary of your assessment results for the current assessment cycle.

SPRING 2013  
 (Assessment Period Covered)

06/14/2013  
 (Date Report Submitted)

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 (Contact Person/email/phone)

**Choose ONE of the following 3 areas for this assessment report and insert the name of the general education area, certificate, degree or discipline on the appropriate line:**

**See definitions for each category in Assessment Process document**

<b>Gen Ed Area</b> (see definitions) _____  AA/AS <input type="checkbox"/> AAS <input type="checkbox"/>  <b>Or Discipline Area</b> (see definitions) _____	or	<b>Program</b> _____ Certificate AA/AS AAS	<b>Physics</b> _____ <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
Outcome(s) assessed: <b>Physics outcome # 1:</b> Employ critical thinking skills to judge the validity of information, <b>Physics Outcome #3:</b> Demonstrate an ability to utilize basic laboratory equipment <b>Physics outcome # 5:</b> Communicate effectively <b>Physics outcome # 6:</b> collaborate with peers in a laboratory setting			
Classes/Cohort Assessed: For <b>PHYS 1692 and 1892</b> , Physics outcome # 5 was assessed. For <b>PHYS 1592 and 1792</b> outcome # 3 was assessed. For <b>PHYS 1810</b> Physics outcome # 1 was assessed. For <b>PHYS 1892</b> physics outcome # 6 was assessed			
Measurement tool(s): <b>PHYS 1592 and PHYS 1892</b> , direct measurements were taken by instructors by scoring a rubric on certain questions given in the lab manual. For <b>PHYS 1692 and PHYS 1892</b> , direct measurement by lab instructors by scoring a rubric on communication aspects of oral presentations. For <b>PHYS 1810</b> , direct measurement was taken by instructors by scoring a rubric on a question given to students at their final examination.			
Type of tool (for each tool listed above, indicate type of tool): Type of tool (for each tool listed above, indicate type of tool): For <b>Physics outcome #3</b> , three criteria of success have been measured on the ability of students based on the performance of pendulum lab.			
(1) Is the measured period within 10% of the calculated period for all of the lengths measured? An answer of yes indicates that the students can read directions and take reasonable measurements. (2) Is the power between 0.4 and 0.6? An answer of yes indicates that the students can read directions, take reasonable measurements, and use the computer program correctly. (3) Do the students correctly understand how the results from the computer-generated curve fit correspond to their physical data? If none of the criteria has been met a score of 0 is given; if one or two of the criteria above are met a score of 1 is given.			

and if all of the criteria have been met, then a score of 2 is given.

For physics outcome # 5, a score of zero is given when a student repeatedly uses the wrong term for a physical quantity or many different quantities. A score of one has been allocated when a student occasionally uses a wrong term for one or two physical quantities while correctly identifying the rest. A score of two has been given for a student who consistently uses the correct term for corresponding physical quantity.

For PHYS 1892, physics outcome # 6, have been assessed by using three point scoring rubric.

*Criteria :Even with intervention by instructor, student was unable to function productively as a part of a team = 0*

*Students team work required at least one intervention by instructor during the semester) = 1*

*Student functioned productively as a part of a team throughout the semester = 2*

For PHYS 1810, Physics outcome #1 was assessed based on a question given at the final examination. A problem was given with two extraneous data on a problem. A scoring rubric has been used in the following format.

0 = both pieces of extraneous info used; 1 = one piece of extraneous info used; 2 = no extraneous information used.

Achievement Target (if more than one measurement tool, list target for each tool separately):

More than one measurement tool has not been used

Assessment Results/Findings (if more than one measurement tool, list results for each tool separately):

For Phys 1592, average score was 1.34 with a variance of 0.34 (sample size was 35)

54% of the students were able to meet at least two criteria while 40% of the students were able to meet all three criteria. There were 6% of students who were unable to meet any of the criteria.

For Phys 1792, average score was 1.35 with a variance of 0.70 (sample size was 17)

58% of the students were able to meet all three criteria while 18 percent of students were able to meet at least two of the criteria given. There were 14% students who were unable to meet any of the criteria.

Instructors will be encouraged to convey important aspect the rubric throughout the semester. We have chosen an experiment given at the very first lab of lab manual. This selection could have been contributed to a lower percentage of students who were not able to meet any of the criteria given. It would be better if a lab experiment can be chosen after first month of the semester as students are more aware of the experimental procedures and data analysis. This might lead to a higher success on the results.

For Physics 1892,

The average score was 1.47 with a variance of 0.25. (sample size is 38)

According to the data, 53% of students occasionally used wrong term for one or two quantities while correctly identifying the rest. A 47% of students consistently used correct terms for corresponding physical quantities.

There were no students (0%) who repeatedly used wrong term for a physical quantity of many different quantities.

It would have been better if the percentage of students who scored 2 is more than 50%.

For PHYS 1692, the average score was 1.46 with a variance of 0.25 (Sample size is 13). Out of total population 54% students were able to score 1 while 46% of students were able to score 2. It should be noted that no student (0%) has scored a score zero.

For PHYS 1892 The average score was 1.55 with a variance of 0.25 (sample size is 38)

The results indicate that majority of students were able to function as a part of a team with very limited intervention by the instructor. A 55% of the population was able to perform the task without any help from the instructor and 45% of the population needed at least one intervention by the instructor. These results do not call for any drastic change in the method of instructions or change in the curriculum.

Physics 1810, The average score was 0.97 with a variance of 0.43. (sample size is 30)

According to the data, 23% of students scored 0, 57% students scored 1 and 20% students scored 2.

The results indicate that majority of students were unable to correctly identify extraneous information provided to them and reach the correct answer.

**CENTRAL NEW MEXICO COMMUNITY COLLEGE  
ASSESSMENT REPORT – Part II  
Action Plan & Assessment Plan Update**

The purpose of this form is to provide a written summary of your assessment action plan for the designated assessment cycle and provide an updated assessment cycle plan for the current 5-year cycle

Academic Year 2012-2013  
 (Report Period)  
 Upul Senaratne/usenaratne/ 505 – 224 – 4000 ext 50327  
 (Contact Person/email/phone)

November 1, 2013  
 (Date Report Submitted)

Indicate **ONE** of the following **3** areas for this assessment report and insert the name of the general education area, certificate, degree or discipline on the appropriate line:

See definitions for each category in Assessment Process document

<b>Gen Ed Area</b> (see definitions) _____  AA/AS <input type="checkbox"/> AAS <input type="checkbox"/>  <b>Or Discipline Area</b> (see definitions) _____	or	<b>Program</b> <u>PHYSICS</u>
		Certificate <input type="checkbox"/> AA/AS <input checked="" type="checkbox"/> x AAS <input type="checkbox"/>
Data Results Period upon which this Action Plan is based (period which ended 6/30/2013):  		
Action Plan (close the loop): For PHYS 1592, (outcome # 3) there were 6% of students who were unable to meet any of the criteria given. Only 40% of the students were able to meet all of the criteria. For PHYS 1792, 14% of students were not able to meet all three criteria. 58% students have met all three criteria. We performed our assessment early in the semester. Our data was based on the results from the very first experiment given to students beginning of the semester. We anticipate better results by introducing an experiment during the midterm. Therefore, for PHYS 1592 and 1792, we have chosen		

experiment # 8 in which students find acceleration of a cart on an inclined plane.

We anticipate that students will have desired proficiency with laboratory equipment, experimental procedures data analysis and computer software by the time they perform the 8<sup>th</sup> experiment.

PHYS 1892, and PHYS 1692 (outcome # 5), we do not plan to change our testing method; however, we will inform instructors to emphasize the correct usage of scientific terms throughout the semester. In addition instructors are advised to correct students' usage of terms during conversations and in the written work.

For Physics 1892, (outcome # 6) majority of students were able to work as a part of a team with very limited intervention by the instructor. Our results do not call for any drastic change in the method of testing, instruction or in the curriculum.

For PHY 1810 (outcome #1), results indicated that majority of students were unable to identify correctly extraneous information provided to them and reach the answer. We plan to give an essay type question where students are required to show detail work.

## ASSESSMENT PLAN

The assessment plan includes three parts:

1. **The plan description** (This should be a brief written description of the assessment plan(s) for the area/certificate/degree/discipline. If all outcomes are not shown in item #3 below as assessed in the 5 year cycle, this description must include information about their eventual assessment)
2. **The student learning outcomes for the area/program/discipline** for the 5 year cycle.
3. **The assessment cycle timeline**

### 1 Plan Description

During SPRING 2014, we plan to repeat testing learning outcome #2 for PHYS 1810 and PHYS 1710. In addition, we will continue testing outcome # 3 for PHYS 1592 and 1792 during SPRING 2014.

For PHYS 1710 and 1810, an essay type question will be given at the final examination and students will be required to show their work.

For PHYS 1592 and 1792, a different experiment will be chosen to get the data. The same scoring rubric that has been used before will be used for the data analysis.

We plan to test outcome # 4 for PHYS 1592, 1792, 1692 and 1892 in SPRING 2015 and testing method will be determined later.

- 2 **Provide the list of current student learning outcomes for this area or program (you may add more lines if necessary by right clicking and choosing insert row below):**

1	Apply knowledge of physics and Mathematics.
2	Identify, formulate and solve Physics problems.
3	Demonstrate an ability to utilize basic laboratory equipment.
4	Conduct experiments, analyze and interpret data
5	Students should be able to communicate effectively about scientific ideas and topics, in both oral and written formats.

6	Collaborate with peers in a laboratory setting.
7	Recognize/identify professional responsibility
8	Recognize/identify the impact of the application of physics in a global, environmental and societal context
9	
10	

**3 Assessment Cycle timeline for the above student learning outcomes for the next five years.**

<b>Outcome #</b>	<b>When Measured</b>	<b>Where measured (i.e. what course(s))</b>	<b>Measurement tool(s) &amp; Type of tool</b>
1	SPRING 2013 <b>SPRING 2014</b>	PHYS 1810 PHYS 1710	Direct measurements were taken by instructors by scoring a rubric on a question given to students at the final examination.
2	SPRING 2012 <b>SPRING 2014</b>	PHYS 1710, PHYS 1810	A problem is given at the final examination. (The question contained an extraneous information) In Spring 2014, an essay type question will be introduced at the final exam.
3	SPRING 2013 <b>SPRING 2015</b>	PHYS 1592, 1792	Direct measurements were taken by instructors by scoring a rubric on certain questions given in lab manual. In Spring 2015, we will introduce 8 <sup>th</sup> lab in which students find the acceleration of a cart on an inclined plane and fit data with a quadratic equation.
4	<b>SPRING 2015</b>	PHYS 1592, 1792, 1692, 1892	<b>To be determined</b>
5	SPRING 2012, 2013	PHYS 1892 (SP 2012, 2013) PHYS 1692, 1892 (SP 2013)	Direct measurements were taken by lab instructors by scoring a rubric on communication aspects of oral presentations and reports.
6	SPRING 2013 <b>SPRING 2016</b>	PHYS 1892 PHYS 1592, 1692, 1792	Direct measurements were taken by lab instructor by a scoring rubric to assess students if they can function productively as a part of a team
7	<b>SPRING 2016</b>	PHYS 1710, 1810, 1792, 1892	Direct measurements by instructors by gathering data (and scoring on a rubric) on frequency of students turning in late assignments and other classwork.
8	<b>SPRING 2017</b>	PHYS 1710, 1810, 1792, 1892	Direct measurements by instructors using common question about the global impact on one midterm or on final exam scored by a rubric.
9			
10			