ASSESSMENT REPORT
CENTRAL NEW MEXICO COMMUNITY COLLEGE

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

Spring 2011-2012 (Assessment Period Covered)

6/19/2012 (Date Report Submitted)

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

Gen Ed Area (see definitions)		or	**Program**	Engineering	
AA/AS			Certificate		
AAS			AA/AS	x	
			AAS		
Or Discipline Area (see definitions)					

Outcome(s) assessed:

By the completion of their degree, students should be able to communicate effectively.

Classes/Cohort Assessed:

Physics 1892

Measurement tool(s):

Direct measurement by lab instructor scoring a rubric on aspects of oral communication during final project presentations.

Type of tool (for each tool listed above, indicate type of tool):

The communication rubric consisted of three parts:

1) During their final project presentations, students were given a score out of two based on their use of scientific terms. A score of zero resulted from students repeatedly using the wrong term for a physical quantity or many different quantities. A score of one resulted from students occasionally using the wrong term for one or two quantities while correctly identifying the rest. A score of two resulted from students consistently using the correct term for a corresponding physical quantity.

2) During their final project presentations, students were given a score out of two based on their use of electricity and magnetism units. Students received a zero score if they repeatedly used the wrong units. Students received a score of one if they occasionally used the wrong unit, and students received a score of two if they consistently used the correct electricity and magnetism unit. If a student's presentation had no electricity and magnetism units, they were given no score.

3) During their final project presentations, students were given a score out of three based on their use of proper physical principles. A zero score meant that a student repeatedly used the wrong physical principle in explaining aspects of their presentation. A score of one resulted when students occasionally used the wrong physical principle in explaining their presentation while a score of two meant that students consistently used the correct physical principle during the presentation.

Achievement Target (if more than one measurement tool, list target for each tool separately): As this was our first year of collecting such data, we consider this year to be our benchmark.
Assessment Results/Findings (if more than one measurement tool, list results for each tool separately): In Physics 1892 during the spring of 2012 semester, the average score on the scientific terms portion of the communication rubric was 1.92 with a variance of 0.07 and sample size of 13. The average score on the electricity and magnetism units portion of the rubric was 1.92 with a variance of 0.07 and sample size of 13. Finally, the average score on the physical principles portion of the rubric was 1.46 with 0.25 variance and sample size of 13.
Action Plan (close the loop): Given the low score on the physical principles section of the communication rubric, it appears that there needs to be greater emphasis on the introduction of concepts in the physics 1892 lab. To this end, it has been decided to expand on an already planned rewrite of the lab manual. The new manual will include more conceptual question in order to give students a better chance to grasp all of the physical principles introduced during the entire course of the semester. Lab manual changes should be complete by January of 2013, and therefore, the communication rubric can be rescored at the end of the 2013 spring semester to see if these changes have improved students' performance.

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

Fall 2011/Spring 2012 — (Report Period)

11/06/2012 — (Date Report Submitted)

Linda Martin/LMartin@cnm.edu/ 50066
(Contact Person/email/phone)

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

Gen Ed Area (see definitions) _____ or **Program** Physics

AA/AS		Certificate	
AAS		AA/AS	X
		AAS	

Or Discipline Area (see definitions) _____

Data Results Period upon which this Action Plan is based (period which ended 6/30/xx):
Data results are from Spring 2012 (the period ending 6/30/2012)

Action Plan (close the loop):

1. The scores for physics 1710 and 1810 are statistically equal and centered on a score of one. Given that such a score shows that the student did not use the extraneous information in their problem solving, we assume students have been given adequate preparation in this by their lectures, homework assignments, and previous exams. We are planning to test using a different "extraneous information" type of problem to assess if our conclusion is on solid ground. This will take place in the fall and spring of 2012.
2. Given the low score on the physical principles section of the communication rubric, it appears that there needs to be greater emphasis on the

introduction of concepts in the lecture classes that support the physics 1892 lab. Instructors in the department will meet to analyze their treatment of concepts in Physics 1610 and 1810, as they correlate to the concepts required in the lab classes.

ASSESSEMENT PLAN

The assessment plan includes three parts:

1. **The plan description (T**his 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

Fall: Revise assessment plan and tools to be more manageable for a small department. This will enable quality data to actually be gathered and analyzed.

Spring: We'll collect, collate, and analyze the data from the assessments designed in the fall.

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 mathematics, science, and engineering.
2	Design and conduct experiments, as well as to analyze and interpret data.
3	Function on multi-disciplinary teams.
4	Identify, formulate, and solve engineering problems.
5	Recognize/identify professional and ethical responsibility.
6	Communicate effectively.
7	Recognize/identify the impact of engineering solutions in a global, economic, environmental, and societal context.
8	Have knowledge of contemporary issues
9	Demonstrate basic techniques, skills, and modern engineering tools necessary for engineering practice.
10	

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

Outcome #	When Measured	Where measured (i.e. what course(s))	Measurement tool(s) & Type of tool
1	Spring 2014-Spring 2016	ENGR 2815, 2910.	Direct measurement by instructors using "energy-remembrance" rubric for exam questions on conservation of energy/Kirchoff's rules (depending on course).
2	Spring 2014-Spring 2017	PHYS 1892.	Direct measurement by lab instructors by having some lab practical aspect on the midterm.
3	Spring 2013-Spring 2016.	PHYS 1892.	Direct measurement by lab instructors using a rubric measuring the functionality of lab groups.
4	Spring 2012-Spring 2015	PHYS 1810.	Direct measurement by instructors using exam question on nested solenoids using a rubric that measures the use of extraneous information.
5	Spring 2013-Spring 2015	PHYS 1710.	Direct measurements by instructors by gathering data on the frequency of students turning in assignments on time.
6	Spring 2012-Spring 2015	PHYS 1892.	Direct measurement by Lab instructors by scoring a rubric on communication aspects of oral presentations
7	Spring 2014-Spring 2017.	ENGR 1010.	Direct measurements by instructors using common rubric to analyze a written analysis of a case study (choice of which is at instructor's discretion).
8	Spring 2014-Spring 2016.	ENGR 1010.	Direct measurements by instructors using common question on one exam or project (choice of which is at instructor's discretion), scored by a rubric.
9	Spring 2012-Spring 2015.	PHYS 1792.	Direct measurement by lab instructors. Instructors will use a rubric in the 12th lab on oscillating motion to measure students' accuracy using the lab equipment.
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