

**Course Assessment Report**  
**Washtenaw Community College**

Discipline	Course Number	Title
Physics	100	PHY 100 01/10/2018- Physics for Elementary Teachers
Division	Department	Faculty Preparer
Math, Science and Engineering Tech	Physical Sciences	Robert Hagood
Date of Last Filed Assessment Report		

**I. Assessment Results per Student Learning Outcome**

Outcome 1: Identify major components of mechanics, heat, sound, electricity and magnetism.

- Assessment Plan
  - Assessment Tool: Department Exam
  - Assessment Date: Winter 2012
  - Course section(s)/other population: All sections in current semester.
  - Number students to be assessed: All students
  - How the assessment will be scored: Scantron test will be scored against a master test.
  - Standard of success to be used for this assessment: 80% of all students who take the assessment will score at least 70%.
  - Who will score and analyze the data: Full-time Physics faculty

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2017		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
21	21

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

No difference

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students enrolled were given the assessment tool.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Two course exams were given to the students, a Test 1 and Test 2. The first 10 questions from each test were embedded assessment questions. The first test asked students to identify the principle associated with mechanics. The second test asked students to identify the principle associated with heat, sound, electricity and magnetism.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

Overall the students had an average score of 80.95%, so in that regard, the outcome was met. But within the data, there were areas where the results do not meet the level of a 70% passing rate. Five questions in total did not meet the 70% level; two of the questions were one student away from reaching the level and the third was two students away from the level. With only 21 students taking the assessment, a difference of 1 correct answer would change the results by 4.7%. With razor thin margins, one or two students is tough to justify. But two of the questions were significantly low in the number of students who responded correctly. This could be cause for concern, but with the low number of students taking the assessment, new questions arise. Did the students not learn these topics well, or was the question on the assessment not written well, leading the students to not fully understand the question?

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Overall, the students are understanding and learning how to incorporate the concepts taught to them in the course. This is reflected in the strength of the assessment results.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

This is the crux of the assessment. Based on the results of the assessment, some questions arose as to why a couple of the assessment questions did not reach their desired level of achievement. The one area that was of concern was momentum, a concept that should not be very difficult for the students to understand and one which the students seem to understand in the course itself, based on their work during labs and on quizzes given on the topic. So was the question written poorly, did students just not grasp the concept or is a large sample size needed to fully understand the root of the assessed concept? The assessor believes that a large sample size, for this concepts and all concepts which the assessment is trying to verify, needs to be gathered to fully understand if the students are mastering all the concepts and learning the outcomes.

When the master syllabus is updated, included in the new syllabus will be a plan to increase the frequency of assessment for the course. To this end, instead of relying on one semester of data, data will be gathered from every student who takes the course over four continuous semesters. Hence, we will increase the number of data points for the assessment.

Outcome 2: Develop and teach a lesson plan for elementary age children based on one of the principles of physics.

- Assessment Plan
    - Assessment Tool: Lesson Plan
    - Assessment Date: Winter 2013
    - Course section(s)/other population: All sections
    - Number students to be assessed: All students
    - How the assessment will be scored: Departmentally-developed Rubric
    - Standard of success to be used for this assessment: 70% of the students must score 70% or higher.
    - Who will score and analyze the data: Full-time departmental faculty.
1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2017		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
21	21

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

No difference.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students taking the class were assessed.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Each student was required to assemble and present their own lesson plan on a topic in physics.

The lesson plans were scored out of 25 points, this was part of their presentation they did for the class. To receive a score of 25, the lesson plan needed to include the following: 1. Title 2. Grade Level 3. Student Learning Outcome 4. Introduction with background on the topic 5. Detailed step-by-step procedures which were followed by students 6. Conclusion with follow-up activities or questions.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

Overall the students did very well. With a couple of exceptions, all students recieved a score of 25 points. They included in their lesson plan all six sections which were required. The students who did not have all aspects of the requirements each only missed one requirement. So the overall average of the lesson plans for the students was 24.7 points. The students more than met the standard of success for the course.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

This section of the assessment was a great success. The students were able to show a mastery of a topic in physics and develop a method of conveying this information to elementary students.

- Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

The assessor is not sure that this area of the assessment needs to be improved or changed. All students in the course demonstrated an understanding of developing a lesson plan and presenting said lesson plan as if they were teaching an elementary class. As with the assessment questions, more data points would be good to verify that the students are understanding the process of development and presentation of a lesson plan. So in the updated master syllabus, four continuous semesters of data will be collected from all students taking the course.

## II. Course Summary and Action Plans Based on Assessment Results

- Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

Overall the course seems to be meeting the learning needs of the students. But the number of students being assessed is small, too small to completely understand if the course is reaching the learning levels that the students need. So changes will be made to the master syllabus.

- Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

Information will be shared at the next department meeting in April 2018.

- Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	To ensure that the course is assessed properly and there is not just anomalies for one course of data, data will be collected for four continuous	In basic data analysis, the number of data points must be considered with interpreting the data. The data collected for the	2019

	semesters, increasing the data points for analysis.	assessment was one class of 24 students, so to better understand trends in the data, more data should be collected. In order to achieve this with a course that has a limited number of students in the class every semester, data will be collected over a longer period of time.	
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4. Is there anything that you would like to mention that was not already captured?

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### III. Attached Files

[Scoring Rubric](#)

[Assessment Test Data](#)

**Faculty/Preparer:** Robert Hagood **Date:** 04/10/2018  
**Department Chair:** Kathleen Butcher **Date:** 05/24/2018  
**Dean:** Kristin Good **Date:** 05/26/2018  
**Assessment Committee Chair:** Shawn Deron **Date:** 08/27/2018

**COURSE ASSESSMENT REPORT**

**Background Information**

1. Course assessed:  
 Course Discipline Code and Number: PHY 100  
 Course Title: Physics for Elementary Teachers  
 Division/Department Codes: MNB
  
2. Semester assessment was conducted (check one):  
 Fall 20\_\_  
 Winter 20\_\_  
 Spring/Summer 20\_\_
  
3. Assessment tool(s) used: check all that apply.  
 Portfolio  
 Standardized test  
 Other external certification/licensure exam (specify):  
 Survey  
 Prompt  
 Departmental exam  
 Capstone experience (specify):  
 Other (specify):
  
4. Have these tools been used before?  
 Yes  
 No

If yes, have the tools been altered since its last administration? If so, briefly describe changes made.

5. Indicate the number of students assessed/total number of students enrolled in the course.  
 36 out of 36, two section of the course were offered in the winter 2006 semester
  
6. Describe how students were selected for the assessment.  
 All students in both courses took the departmental final exam.

**Results**

1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.  
 No previous course assessment.
  
2. State each outcome from the master syllabus that was assessed.  
 Heat and Temperature; Electricity; and Magnetism
  
3. Briefly describe assessment results based on data collected during the course assessment, demonstrating the extent to which students are achieving each of the learning outcomes listed above. Please attach a summary of the data collected.  
 The departmental exam was given to all students in the two course, each questions was a multiple choice question. The students were asked to identify specific topics related to the course objectives, each course outcome had two questions that dealt with that specific concept. Of the three outcomes, the goal was to show that 75% of the students could recognize the specific concept. For all three concepts, the students were able to satisfy the requirements.
  
4. For each outcome assessed, indicate the standard of success used, and the percentage of students who achieved that level of success.  
 For each outcome, 75% of the students were expected to correctly choose the proper answer. Heat and Temperature - 88.5%; Electricity - 91.5 %; Magnetism - 95.5%, theses percentages represent the number of students the got the question correct, demonstrating that the students could recognize the proper concept.

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COURSE ASSESSMENT REPORT

- 5. Describe the areas of strength and weakness in students' achievement of the learning outcomes shown in assessment results.

Strengths: The students were able to show that they understood the topics and were able to recognize when to apply the concepts.

Weaknesses: None

Changes influenced by assessment results

- 1. If weaknesses were found (see above) or students did not meet expectations, describe the action that will be taken to address these weaknesses, along with a timeline for these actions.
- 2. Identify any other intended changes that will be instituted based on results of this assessment activity (check all that apply). Please describe changes and give rationale for change.

Master syllabus  
Change/rationale:

Curriculum  
Change/rationale:

Course syllabus  
Change/rationale:

Course assignments  
Change/rationale:

Course materials (check all that apply)

- Textbook
- Handouts
- Other:

Change/rationale:

Instructional methods  
Change/rationale:

Other:  
Change/rationale:

Future plans

- 1. Describe the extent to which the assessment tools used were effective in measuring student achievement of learning outcomes for this course.  
The assessment tool helps the department to understand the areas that the students lack understanding. This assessment tool will be modified in the future to better identify areas of weakness of the students understanding.
- 2. If the assessment tools were not effective, describe the changes that will be made for future assessments.

Submitted by:

Name: [Signature] Date: 2/29/06

Department Chair: [Signature] Date: 2/29/06

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**COURSE ASSESSMENT REPORT**

**WASHTENAW COMMUNITY COLLEGE**

Dean: M. Shouse

Date: 7/3/06