

Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Pharmacy Technology	101	PHT 101 11/21/2016- Pharmacology for Pharmacy Technicians
Division	Department	Faculty Preparer
Health Sciences	Allied Health	Kiela Samuels
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Recognize and apply the basic terms of pharmacology.

- Assessment Plan
 - Assessment Tool: Multiple-choice and matching test.
 - Assessment Date: Winter 2013
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students
 - How the assessment will be scored: The test will be scored using an answer sheet.
 - Standard of success to be used for this assessment: 75% of the students will score 71% or higher on the assessment related questions.
 - Who will score and analyze the data: Departmental faculty will score and analyze the data.

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)
	2016, 2015, 2014	

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

# of students enrolled	# of students assessed
52	52

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.

N/A

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 must take the final exam as a requirement for the course.

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

1. Ten questions from the final Blackboard administered exam were selected specifically to this outcome.
2. The 10 questions were exported into an excel spreadsheet and then a pivot table (data summarization tool) was used to sort data.
3. The data was sorted by student, question, and response.
4. Calculated the percentage to 10 questions the student answered correctly.
5. Calculated the percentage of the students who answered greater than 71% of the questions correctly.

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

2014: Students overwhelmingly achieved this outcome. 92% of the students (12 of 13) scored 71% or higher. Only one student had an average score below 90% using the 10 question assessment.

2015: Students did well this year but more students scored an average of less than 71% on the 10 question assessment than in other years. Conversely, more students answered all 10 questions correctly in this class than the other years (7 out of 17 students.)

2016; Students again did very well on this outcome. More than a third of the students answered all 10 questions correctly.

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

16 out of 52 students answered all 10 questions correctly, while less than 10% of students answered 3 or more questions incorrectly. Of all 4 outcomes, students consistently performed strongest in this area.

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.

There are two concepts students did not score well on: bioavailability and aspects of coronary artery disease. The 2014 course struggled with both questions while the 2015 course only struggled with the coronary artery disease question. The 2016 course had some trouble with both questions but actually performed worst on a different question about half-life and steady state. The questions chosen to assess this outcome were more detailed and required specific knowledge compared to questions for the other outcomes. This might account for the variability between years. Future plans include creating a study guide of specific disease states/therapies that will be reviewed with students every year to ensure that all of these topics are covered every year.

Outcome 2: Identify the mechanism of action and side effects of the most commonly used pharmaceuticals and herbal preparations.

- Assessment Plan
 - Assessment Tool: Multiple-choice and matching test.
 - Assessment Date: Winter 2013
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students
 - How the assessment will be scored: The test will be scored using an answer sheet.
 - Standard of success to be used for this assessment: 75% of the students will score 71% or higher on the assessment related questions.
 - Who will score and analyze the data: Departmental faculty will score and analyze the data.
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)
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	2016, 2015, 2014	
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2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
52	52

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.

N/A

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 must take the final exam as a requirement for the course.

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

1. Ten questions from the final Blackboard administered exam were selected specifically to this outcome.
2. The 10 questions were exported into an excel spreadsheet and then a pivot table (data summarization tool) was used to sort data.
3. The data was sorted by student, question, and response.
4. Calculated the percentage to 10 questions the student answered correctly.
5. Calculated the percentage of the students who answered greater than 71% of the questions correctly.

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
 2014: Students overwhelmingly achieved this outcome. 85% of students scored 71% or higher and actually averaged 90% or higher on the 10 questions selected for the assessment. Slightly more than half of the students answered every question correctly.

2015: More students scored above 71% than in the previous year (88%) and no student answered more than 4 questions wrong.

2016: Half of the 22 students in this class answered all 10 questions correctly. However, nearly a third of students answered 3 or more questions incorrectly. One student answered only 3 questions correctly.

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

Slightly more than half of all students in all 3 years were able to answer all 10 questions correctly. Of all 4 outcomes, this outcome has the most "expert" level of students. The questions varied, but all courses had at least 2 questions in which all students in the class answered correctly.

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.

Students struggled with one question the most. This was consistent between all three years. This question was regarding mechanism of action of antihypertensive medications. It is surprising that so many students would answer incorrectly since a lot of time is spent discussing hypertension and antihypertensive medications. In the future, more time will be spent discussing the mechanisms of action for each antihypertensive class of drugs.

Outcome 3: Identify drug nomenclature of the most commonly used pharmaceuticals.

- Assessment Plan
 - Assessment Tool: Multiple-choice and matching test.
 - Assessment Date: Winter 2013
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students
 - How the assessment will be scored: The test will be scored using an answer sheet.
 - Standard of success to be used for this assessment: 75% of the students will score 71% or higher on the assessment related questions.
 - Who will score and analyze the data: Departmental faculty will score and analyze the data.
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)
	2016, 2015, 2014	

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

# of students enrolled	# of students assessed
52	52

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.

N/A

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 must take the final exam as a requirement for the course.

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

1. Nine questions from the final Blackboard administered exam were selected specifically to this outcome.
2. The 9 questions were exported into an excel spreadsheet and then a pivot table (data summarization tool) was used to sort data.
3. The data was sorted by student, question, and response.
4. Calculated the percentage to 9 questions the student answered correctly.
5. Calculated the percentage of the students who answered greater than 71% of the questions correctly.

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
 2014: Technically 92% (all but one) of the students scored 71% or higher and achieved this outcome. However, only three students answered all 9 questions

correctly and slightly more than a third of the students averaged less than 80%. Only 1 student did not meet the 71% standard of success.

2015: This course barely reached the goal set for the standard of success, which was for 75% of the students to answer 71% or more of 9 questions correctly. This year, 76% met that goal. If 10 questions had been assessed instead of 9, it's possible that the average would have improved.

2016: This course did NOT meet the standard of success. Only 68% of the 22 students had average scores of greater than 71%. Eight of the students in the class were able to answer all 9 questions correctly.

3 year average: 78.7% technically meets the standard of success but there is significant room for improvement in course content and question selection for the assessment.

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

12 of the 52 students were able to answer all 9 questions correctly and more than half of all students answered 8 or more questions correctly. Students performed equally well on most questions and had few weaknesses as a whole.

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.

Students performed worst on this outcome compared to the other 4 outcomes. The 2014 class did well but steadily decreased until the 2016 class, which performed so poorly that they did not meet the standard of success. Part of the problem is the choice of questions, which were not the best for assessing this particular outcome. Questions on the final were written without the outcomes in mind so these are not the best questions to specifically assess student's abilities to identify drug nomenclature. Students struggled with three questions, one in particular. This question asked students to identify the generic name for Vitamin K, which should have been a review from the Top 200 Drugs tested in PHT-100. In the future, more time will be spent discussing this agent and other reversal agents which are important to know for emergency situations.

Outcome 4: Identify drug classifications and their actions, efficacy and side effects.

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 - Assessment Tool: Multiple-choice and matching test.

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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 must take the final exam as a requirement for the course.

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

1. Ten questions from the final Blackboard administered exam were selected specifically to this outcome.
2. The 10 questions were exported into an excel spreadsheet and then a pivot table (data summarization tool) was used to sort data.
3. The data was sorted by student, question, and response.
4. Calculated the percentage to 10 questions the student answered correctly.

5. Calculated the percentage of the students who answered greater than 71% of the questions correctly.

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

2014: Students met the goal for this outcome's standard of success. 85% of students answered more than 71% of the questions correctly. Two questions were frequently answered incorrectly. Aside from those two questions, most students answered all other questions correctly.

2015: Results are similar to the previous year, with 88% of students meeting the standard of success. The same two questions from the 2014 assessment continue to be difficult for this year as well.

2016: Again, the same 2 questions are causing trouble for students in this year. Overall, students in this year are doing better than the previous years. 9 out of 22 students answered all 10 questions correctly.

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

Students performed consistently well all three years, all with averages in the mid 80's, which means that most students answered at least 8 of the 10 questions correctly.

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.

Many students struggled with a question regarding the side effects of NSAIDS. Unsure why students had trouble with this question because it should have been discussed in class. Another question that students found difficult was a question that asked for the mechanism by which vaccines confer immunity. Although this is an important topic, only a short amount of time is spent discussing vaccinations in class, which could account for the class's poor performance.

II. Course Summary and Action Plans Based on Assessment Results

1. 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, this assessment has given me the impression that this course is doing an excellent job of meeting its goals for outcomes and could potentially raise the goal for future semesters. This assessment brought attention to particular questions on the final exam that students struggled with, even though those topics should have been covered in the curriculum.

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

Being the only full-time instructor for this program, I will share this information with our lab assistant as well as our advisory committee members.

3. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	Exam questions where students averaged below the 71% standard of success will be reviewed.	To determine if the questions need to be revised or to reinforce instruction in that area.	2017

4. Is there anything that you would like to mention that was not already captured?

5.

III. Attached Files

[PHT 101 Winter 2013](#)

[PHT 101 Winter 2015](#)

[PHT 101 Winter 2014](#)

Faculty/Preparer: Kiela Samuels **Date:** 06/26/2017
Department Chair: Connie Foster **Date:** 06/27/2017
Dean: Valerie Greaves **Date:** 06/28/2017
Assessment Committee Chair: Michelle Garey **Date:** 10/18/2017