

Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Biology	111	BIO 111 07/23/2018- Anatomy and Physiology - Normal Structure and Function
Division	Department	Faculty Preparer
Math, Science and Engineering Tech	Life Sciences	Anne Heise
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Apply correct terminology when referring to the structure and function of the human body at all levels, including biochemical, molecular, cellular, histological and organismal.

- Assessment Plan
 - Assessment Tool: multiple choice questions on cumulative final exam.
 - Assessment Date: Fall 2017
 - Course section(s)/other population: all sections
 - Number students to be assessed: 100% of students/section.
 - How the assessment will be scored: item analysis.
 - Standard of success to be used for this assessment: 70% of the students will score 75% or higher.
 - Who will score and analyze the data: department 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, 2016, 2016, 2015, 2014, 2013	2018, 2017, 2016, 2015, 2014, 2014	

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

# of students enrolled	# of students assessed
3716	1156

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.

Not all instructors submitted data.

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 instructors were asked to assess their students and submit data.

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

A Bio 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

An accumulative final is given to students in Bio 111. Our Bio 111 team: Susan Dentel, David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the Bio 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. See data summary sheet.

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

The standard was met in all 10 semesters, with average percent correct ranging from 77% to 90%.

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

Three questions were used to assess this outcome in Fall 2013 - Fall 2014. Beginning in Winter 2015 four questions were used to assess the outcome. Students did well overall, but question 3 stands out. The standard of success was met only once between Fall 2013 and Winter 2017. Question 3 is a straightforward question about terms used to describe anatomical position.

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.

Instructors should be made aware that students may need more practice with anatomical position terminology (e.g., medial/lateral; proximal/distal etc.)

Outcome 2: Recognize the importance of homeostasis, and how it depends on events, including gene expression, that occur at the chemical and cellular level.

- Assessment Plan
 - Assessment Tool: multiple choice questions on cumulative final exam.
 - Assessment Date: Fall 2017
 - Course section(s)/other population: all sections
 - Number students to be assessed: 100% of students/section.
 - How the assessment will be scored: item analysis.
 - Standard of success to be used for this assessment: 70% of the students will score 75% or higher.
 - Who will score and analyze the data: department 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, 2016, 2016, 2015, 2014, 2013	2018, 2017, 2016, 2015, 2014, 2014	

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

# of students enrolled	# of students assessed
3716	1156

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.

Not all instructors submitted data each semester.

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 instructors in all sections were asked to collect and submit data.

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

A Bio 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

A cumulative final is given to students in Bio 111. A Bio 111 team comprising Susan Dentel, David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the Bio 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. See data summary sheet.

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: No

In 5 of the 10 assessed semesters the standard was not met, with average percent correct ranging from 62% to 71%. In the other 5 semesters the standard was met, with average percent correct ranging from 75% to as high as 94%. The standard was not met in 4 of the past 5 assessed semesters (from Winter 2016 to Winter 2018).

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

Generally students did well answering a question about the genetic basis of cellular differentiation.

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.

Although there was a lot of between-semester variation for this outcome, the lowest rates of success were for the 2 questions addressing positive and negative feedback loops. Given that this is covered early in the term, and assessed for this report at the end of the term, I would suggest instructors make more attempts to

reinforce the concept of feedback loops throughout the semester. Additionally, it may be possible to find opportunities in lab to discuss positive and negative feedback loops.

Outcome 3: Identify the structural organization of the human body, including types of cells, tissues, body cavities and organs.

- Assessment Plan
 - Assessment Tool: multiple choice questions on cumulative final exam.
 - Assessment Date: Fall 2017
 - Course section(s)/other population: all sections
 - Number students to be assessed: 100% of students/section.
 - How the assessment will be scored: item analysis.
 - Standard of success to be used for this assessment: 70% of the students will score 75% or higher.
 - Who will score and analyze the data: department 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, 2016, 2016, 2015, 2014, 2013	2018, 2017, 2016, 2015, 2014, 2014	

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

# of students enrolled	# of students assessed
3716	1156

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.

Not all instructors submitted data.

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 instructors were asked to assess their students and submit data.

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

A Bio 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

An accumulative final is given to students in Bio 111. Our Bio 111 team: Susan Dentel, David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the Bio 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. See data summary sheet.

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

The standard was met in all 10 semesters, with average percent correct ranging from 78% to 91%.

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

The standard of success was met in all 10 semesters assessed in this project.

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.

I am honestly surprised at how well students did on these questions. The questions get at anatomical facts that I would have thought students would have difficulty remembering, but I guess I'm wrong!

Outcome 4: Identify the major organ systems, their structures, and how those structures function to maintain homeostasis.

- Assessment Plan
 - Assessment Tool: multiple choice questions on cumulative final exam.
 - Assessment Date: Fall 2017

- Course section(s)/other population: all sections
- Number students to be assessed: 100% of students/section.
- How the assessment will be scored: item analysis.
- Standard of success to be used for this assessment: 70% of the students will score 75% or higher.
- Who will score and analyze the data: department 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, 2016, 2016, 2015, 2014, 2013	2018, 2017, 2016, 2015, 2014, 2014	

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

# of students enrolled	# of students assessed
3716	1156

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.

Not all instructors submitted data.

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 instructors were asked to assess their students and submit data.

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

A Bio 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

An accumulative final is given to students in Bio 111. Our Bio 111 team: Susan Dentel, David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the Bio 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. See data summary sheet.

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: <u>Yes</u>
The standard of success was met in 7 of the 10 assessed semesters, with average percent correct ranging from 75% to 88%. The standard was not met in 3 semesters, with average percent correct scores ranging from 66% to 71%.

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

The standard of success was met in 7 of 10 semesters assessed. The questions changed from 2013/14 to 2014/18. It appears that students are doing well with the new questions that focus on bone marrow and on the structure/function of parts of the brain.

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.

Performance was weak on questions about the circulatory system, including a question whose answer depends on knowing the definition of a vein. This would be an easy thing for instructors to stress with their students.

Outcome 5: Demonstrate proficiency in lab-based skills.

- Assessment Plan
 - Assessment Tool: lab worksheets
 - Assessment Date: Fall 2017
 - Course section(s)/other population: all sections
 - Number students to be assessed: all
 - How the assessment will be scored: answer key
 - Standard of success to be used for this assessment: 70% of the students will score 75% or higher.
 - 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)
2017, 2016, 2016, 2015	2018, 2017, 2016, 2015	

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

# of students enrolled	# of students assessed
2568	867

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.

Not all instructors assessed and submitted data.

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 instructors of all sections were asked to assess and submit data.

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

A Bio 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

An accumulative final is given to students in Bio 111. Our Bio 111 team: myself, David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the Bio 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. I also averaged the two semesters. See data summary sheet.

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

Lab assessment began in Winter 2015. Lab worksheets were used to assess this outcome. Four questions related to lab skills were used for the assessment. The standard of success was met in all 7 assessed semesters with average percent correct ranging from 78% to 85%.

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

Students were successful overall on the lab questions, including a question involving calculation of vital capacity and 2 different questions identifying anatomical structures.

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.

Performance was weakest on a question about the behavior of the diaphragm during expiration. Use of the balloon model in lab might reinforce this concept.

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 I am impressed with student achievement on this battery of questions. Bio 111 covers literally hundreds of new terms and concepts, and students have a lot to remember over the course of a semester. I was surprised that the standard of success was sometimes not met on questions that were at a low level on Bloom's taxonomy -- like remembering the definition of a vein, or the use of the anatomical term "medial". Instructors could be asked to include more cumulative "look-back" questions on their quizzes and tests, so that students would have more opportunities to remember information covered early in the semester.

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

The results will be shared with all faculty, full and part-time, who teach Bio 111.

3. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	The standard of success is currently said to be 70% of students will score 75% or better. Change this to: for	It's hard to even understand what 70% of students scoring 75% or better might mean. Perhaps it means	2019

	<p>each outcome, on average at least 75% of the answers to all the questions are correct.</p>	<p>calculating individual student scores and counting whether 70% of the students got 75% or better. We are not doing this and never will.</p> <p>What we are actually doing is aggregating all the students and then asking question by question (4 questions per outcome) how many students answered correctly. If 75% or more answered correctly, then the standard was met. I believe this is captured by saying on average at least 75% of the answers to all the questions are correct.</p>	
<p>Other: additional emphasis on some concepts</p>	<p>As the assessor and not the lead instructor for Bio 111, I am willing to make some suggestions but am not willing to prescribe an action plan.</p> <p>I suggest: creating a role-playing exercise for lab that illustrates positive and negative feedback loops.</p>	<p>Role playing: lack of success on Outcome 2 leads me to consider other ways of teaching these concepts.</p> <p>Master study guide: The course covers immense amounts of material from concepts to simple facts, and everyone might benefit from an easy-to-use</p>	<p>2019</p>

	<p>This may help students improve on Outcome 2.</p> <p>I also suggest that faculty who frequently teach Bio 111 -- e.g. Dentel, Wooten, Boluyt, and Labadie -- discuss whether a master study guide or list of objectives could be written up and disseminated to all Bio 111 students or faculty.</p>	<p>distillation of the master syllabus.</p>	
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4. Is there anything that you would like to mention that was not already captured?

There are about 15 sections of Bio 111 offered in each Fall or Winter semester. Susan Dentel solicits assessment data from all sections in every Fall and Winter semester. She compiled the data in a spreadsheet that was very easy for me to use.

III. Attached Files

[Bio 111 2014-18 results](#)

[2013-4 Bio 111 assessment questions](#)

[Bio 111 2013-14 results](#)

[2014-18 Bio 111 assessment questions](#)

Faculty/Preparer: Anne Heise **Date:** 07/25/2018

Department Chair: Anne Heise **Date:** 07/25/2018

Dean: Kristin Good **Date:** 07/26/2018

Assessment Committee Chair: Shawn Deron **Date:** 08/27/2018

**Course Assessment Report
Washtenaw Community College**

Discipline	Course Number	Title
Biology	111	BIO 111 04/08/2013- Anatomy and Physiology - Normal Structure and Function
Division	Department	Faculty Preparer
Math, Science and Health	Life Sciences	Susan Dentel
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Use correct terminology when referring to the structure and function of the human body at all levels, including biochemical, molecular, cellular, histological and organismal.

- Assessment Plan
 - Assessment Tool: multiple choice questions on cumulative final exam.
 - Assessment Date: Fall 2011
 - Course section(s)/other population: all sections
 - Number students to be assessed: 100% of students/section.
 - How the assessment will be scored: item analysis.
 - Standard of success to be used for this assessment: 75% of answers correct.
 - Who will score and analyze the data: department 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)
2012	2012	

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

# of students enrolled	# of students assessed
575	230

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.

We were only able to assess some of the sections because of non-compliance on the part of some part-time instructors.

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.

We were able to assess regular classes, MM, day and evening classes. Currently, there are not any BIO 111 courses offered at extension sites.

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

A BIO 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

An accumulative final is given to students in BIO 111. Our BIO 111 team: myself, David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the BIO 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. I also averaged the two semesters. See data summary sheet.

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: No

During the winter of 2012, 61 students out of a total of 96 students (64%) answered outcome #1 questions correctly. During the fall of 2012, 87 students out of a total of 134 students (65%) answered outcome #1 questions correctly. Over two semesters a total of 148 students out of total of 230 (64%) students answered questions correctly.

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

Our assessment results didn't show a positive result for this outcome. All three of the questions answered showed similar 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.

Areas for improvement:

- As a group, we need to re-examine our final exam questions for outcome #1 for clarity.
- We need to build many more questions into the standardized final for each outcome.
- This objective relates to material covered very early on in the course and perhaps because there is so much material in the course, students are forgetting this early material. Maybe we need to find ways to reinforce this introductory material throughout the duration of the course.

Outcome 2: Recognize the importance of homeostasis, and how it depends on events, including gene expression, that occur at the chemical and cellular level.

- Assessment Plan
 - Assessment Tool: multiple choice questions on cumulative final exam.
 - Assessment Date: Fall 2011
 - Course section(s)/other population: all sections
 - Number students to be assessed: 100% of students/section.
 - How the assessment will be scored: item analysis.
 - Standard of success to be used for this assessment: 75% of answers correct.
 - Who will score and analyze the data: department 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)
2012	2012	

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

# of students enrolled	# of students assessed
575	230

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.

We were only able to assess some of the sections because of non-compliance on the part of some part-time instructors.

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.

We were able to assess regular classes, MM, day and evening classes. Currently, there are not any BIO 111 courses offered at extension sites.

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

A BIO 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

An accumulative final is given to students in BIO 111. Our BIO 111 team: myself, David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the BIO 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. I also averaged the two semesters. See data summary sheet.

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

During the winter of 2012, 85 students out of a total of 96 students (89%) answered outcome #2 questions correctly. During the fall of 2012, 108 students out of a total of 134 students (80%) answered outcome #2 questions correctly. Over two semesters a total of 193 students out of total of 230 (84%) students answered questions correctly.

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

The overall average of students answering questions related to this outcome was at 84%. Students scored high percentages on the three questions associated with this outcome. These questions relate to cellular processes.

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.

As a group, we need to build many more questions to assess this outcome adequately.

Outcome 3: Identify the structural organization of the human body, including types of cells, tissues, body cavities and organs.

- Assessment Plan
 - Assessment Tool: multiple choice questions on cumulative final exam.
 - Assessment Date: Fall 2011
 - Course section(s)/other population: all sections
 - Number students to be assessed: 100% of students/section.
 - How the assessment will be scored: item analysis.
 - Standard of success to be used for this assessment: 75% of answers correct.
 - Who will score and analyze the data: department 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)
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2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
575	230

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.

We were only able to assess some of the sections because of non-compliance on the part of some part-time instructors.

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.

We were able to assess regular classes, MM, day and evening classes. Currently, there are not any BIO 111 courses offered at extension sites.

5. Describe the process used to assess this outcome. Include a brief description of this

tool and how it was scored.

A BIO 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

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- 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: No

During the winter of 2012, 76 students out of a total of 96 students (79%) answered outcome #3 questions correctly. During the fall of 2012, 90 students out of a total of 134 students (67%) answered outcome #3 questions correctly. Over two semesters a total of 166 students out of total of 230 (64%) students answered questions correctly.

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

For outcome #3, the results for question #8 and #9 were strong ranging between 79% and 90%. On this assessment, we were very close to reaching our criteria of success. Question #7 had a lower percentage of correct responses and affected the overall average.

- 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.

- As a group, we need re-examine question #7 for clarity.
- We need to build many more questions into the standardized final for each outcome.

Outcome 4: Identify the major organ systems, their structures, and how those structures function to maintain homeostasis.

- Assessment Plan

- Assessment Tool: multiple choice questions on cumulative final exam.
- Assessment Date: Fall 2011
- Course section(s)/other population: all sections
- Number students to be assessed: 100% of students/section.
- How the assessment will be scored: item analysis.
- Standard of success to be used for this assessment: 75% of answers correct.
- Who will score and analyze the data: department 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)
2012	2012	

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

# of students enrolled	# of students assessed
575	230

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.

We were only able to assess some of the sections because of non-compliance on the part of some part-time instructors.

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.

We were able to assess regular classes, MM, day and evening classes. Currently, there are not any BIO 111 courses offered at extension sites.

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

A BIO 111 final exam is administered at the end of the semester. There are 12 novel questions (not previously seen by students) that are included in the final exam. These questions are used for this assessment.

An accumulative final is given to students in BIO 111. Our BIO 111 team: myself,

David Shier, David Wooten and Marvin Boluyt created the 12 questions that were used to assess the BIO 111 outcomes. Each section assessed recorded the number of students who scored correctly on each assessment question. I then took an average of the percent correct for all assessment questions related to each outcome. I also averaged the two semesters. See data summary sheet.

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: No

During the winter of 2012, 71 students out of a total of 96 students (74%) answered outcome #4 questions correctly. During the fall of 2012, 86 students out of a total of 134 students (64%) answered outcome #4 questions correctly. Over two semesters a total of 157 students out of total of 230 (68%) students answered questions correctly.

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

Students scored high percentages for Question #10. This question related to the urinary system and was a fairly simple question.

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.

Question #11 and #12 involved more critical thinking and also both of these questions related to the cardiovascular system.

- Discuss how we are addressing the cardiovascular system in our courses
- As a group, we need re-examine our final exam questions for outcome #4 for clarity.
- We need to build many more questions into the standardized final for each outcome.

Outcome 5: Demonstrate proficiency in lab-based skills.

- Assessment Plan
 - Assessment Tool: lab worksheets
 - Assessment Date: Fall 2011

- Course section(s)/other population: all sections
- Number students to be assessed: all
- How the assessment will be scored: answer key
- Standard of success to be used for this assessment: the class average on performance on lab worksheets will be 75%.
- 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)
2012	2012	

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

# of students enrolled	# of students assessed
575	0

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.

does not apply

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.

The lab assessment portion (outcome #5) has not been done historically so this assessment was not done. Our group may have to re-examine this outcome together and decide if it is valid to have. Our students work in the cadaver room and have many lab experiences, but in this course, they are not necessarily demonstrating laboratory skills. It is a more experiential lab experience where concepts and structures are realized.

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

none

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: <u>No</u>
none

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

This outcome was not assessed.

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 outcome was not assessed.

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?

I am not convinced entirely that we are not meeting the needs of our students in anatomy and physiology. I was surprised by the results, particularly the fact that students missed questions pertaining to A&P terminology and simple chemistry. More than anything, it seems evident that our learning tool needs to be developed so that our results can give us a deeper, more accurate description of how well the course is meeting student needs.

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

This information will be shared with departmental faculty who teach anatomy and physiology at a scheduled meeting just for this group sometime before the winter 2013 semester is over. A copy of the assessment results will be given to each person in the group and we will have a discussion about the action plan.

3. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Outcome Language	We need to decide if we want to measure laboratory skill as an outcome	Our laboratory experience is about learning anatomical structure. Students	2014

	or if we want to eliminate this particular outcome.	don't actually perform the dissections themselves on the cadavers. Microscopes are set up for students to view histology. They are not preparing their own slides.	
Assessment Tool	<ul style="list-style-type: none"> ○ Increase number of questions for each outcome. ○ Work carefully with the wording of questions used in the assessments. 	Three questions per outcome is not an adequate number of questions to assess properly.	2014
Pre-requisite	We want to add BIO 161 and 162 as pre-requisites for BIO 111.	These two new courses are new options for students entering into BIO 111 and actually cover more relevant topics related to anatomy and physiology than BIO 101, although it will still remain a pre-requisite.	2013
Other: Ongoing assessment-100% of BIO 111	One important goal is to make assessment a regular part of each semester so we can follow trends more closely and tweak	The objective is to increase compliance of part-time instructors in all the BIO 111 sections.	2013

	course changes as we go. Also, as part-timers become familiar with the process we will have greater compliance and will be able to assess all of our sections.		
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4. Is there anything that you would like to mention that was not already captured?

none

III. Attached Files

[Bio 111 Assessment Data: 2012](#)

Faculty/Preparer: _____ **Date:** _____

Department Chair: _____ **Date:** _____

Dean: _____ **Date:** _____

Assessment Committee Chair: _____ **Date:** _____

COURSE ASSESSMENT REPORT**Background Information**

1. Course assessed:
 Course Discipline Code and Number: BIO 111
 Course Title: Anatomy and Physiology
 Division/Department Codes: MNBS/LIF
2. Semester assessment was conducted (check one):
 Fall 20__
 Winter 20**06**
 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): Cumulative Final Exam and Lab Performance
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.
 Cumulative final exam questions are modified every semester.

5. Indicate the number of students assessed/total number of students enrolled in the course.
 47/47
6. Describe how students were selected for the assessment.
 all were assessed

Results

1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.
 Ongoing changes based on feedback from instructors of courses (such as a HSC 220 and BIO 237, into which this course feeds.
2. State each outcome from the master syllabus that was assessed.
 all were assessed
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.
 Please see attached summary. The data suggest that most outcome objectives were achieved. Objective 4 was below the minimum.
4. For each outcome assessed, indicate the standard of success used, and the percentage of students who achieved that level of success.
 The standard was 70% of the students responding correctly to clusters of questions. These percents and copies of the questions are attached.
5. Describe the areas of strength and weakness in students' achievement of the learning outcomes shown in assessment results.

Please return completed form to the Office of Curriculum & Assessment, SC 247.

COURSE ASSESSMENT REPORT

Strengths: Students did well in areas requiring memorization of specific structures and substances.

Weaknesses: Students did not perform as well in areas that required understanding of principles and processes. In one area concerning homeostasis (outcome 4), performance fell short of the 70% level.

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.
 Homeostasis and homeostatic mechanisms are areas that have historically been challenging for students. Faculty in this area will be discussing these results this summer. We anticipate that technology-based approaches, such as DVD and web-based animations will be a major component. In addition, we will adjust ongoing development of lab-based case studies to specifically emphasize homeostasis. We anticipate implementation during fall 2006 and winter 2007.

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: restate objectives for better consistency with assessment tools/more careful alignment between outcome objectives and assessment tools should help students

 - Course assignments
Change/rationale:

 - Course materials (check all that apply)
 - Textbook
 - Handouts
 - Other: modify objectives (handouts and on Blackboard) for consistency with assessment tools
 Change/rationale:

 - Instructional methods
Change/rationale: continue to develop and implement case studies in lab with emphasis on homeostasis/inquiry-based active learning has been effective with our students in the past

 - 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 revealed areas where students are successful as well as areas where improvement can occur. In this regard the tools were useful.
2. If the assessment tools were not effective, describe the changes that will be made for future assessments.
 assessment tools appear effective, but evaluation and modification is ongoing -- in particular, we will continue to check for consistency between stated outcome objectives and corresponding assessment tools

Submitted by:

Please return completed form to the Office of Curriculum & Assessment, SC 247.

COURSE ASSESSMENT REPORT

Name: David Shier

Date: 6/29/06

Department Chair: Wanda Grossman

Date: 6/29/06

Dean: M. Glavin

Date: 7/3/06