CNM ANNUAL STUDENT LEARNING ASSESSMENT REPORT

Due to the Student Academic Assessment Committee by October 15

CNM
Central New Mexico Community College

PART 1: REPORT INFORMATION

Report Year and Contact Information			
2017-2018	Anna Gilletly	aeast@cnm.edu	50238
Academic Year	**Contact Person**	**CNM Email**	**CNM Office Extension**

Subject of this Report
MSE--PHLTHSCI_AA--Pre-Health Science Degree

PART 2: CONTEXT IN WHICH THE ASSESSMENT TOOK PLACE

Program/Area Highlights and Successes (Wherever applicable, include course completion rates, job placement outcomes, and licensing examination pass rates. See the program information dashboard at https://livecnm.sharepoint.com/sites/Dashboards/SitePages/Program%20Information%20Dashboard.aspx (access restricted to CNM employees) and other reports at https://www.cnm.edu/depts/opie.)
Bio 1492 continues to demonstarte high student success with these outcomes. Revision of BIO2192 assessment tools to assess more difficult tasks identified areas of instruction that need improvement (PHS3); however, our near-end PHS degree students demonstrate strong effective communication skills (PHS1).

Changes Implemented During the Past Year in Support of Student Learning
This past Fall 2017 and Spring 2018 we began piloting a newly designed lab manual for BIO 1492 written by department faculty. We used the same assessment questions on the final exams for both courses.   What we've found includes: 1) Generally speaking, BIO 1492 students were successful the previous year and this year. We are happy were their success.   2) BIO 1492 students still have the hardest time with the most-difficulty concepts (e.g., interpreting pedigree charts)   3) Student performance on interpreting/solving pedigree charts relating to blood types fell from 76% and 78% in Fall 2016-Spring 2017 to 60%. We are considering whether this is an artifact or reflecting a change in our new lab manual edition.

In BIO 2192 we rewrote some sections of the midterm exam and re-targeted PHS3 questions to analyze results from MAC, TSI, and sucrose tests. This was a more difficult task that the questions used the previous year on TSA blood culture, assessment of pathogen potential, and novobiocin disc assay interpretation. We were not surprised that correct response rates fell from an average of 72% in Fall2016/Spring2017 to 62% in Fall2017/Spring 2018.

PART 3: REPORT ON ASSESSMENT OF STUDENT LEARNING

Assessment Method	Type of Assessment Tool	Population or Course(s) Assessed	Graduate Learning Outcome(s) Assessed	Mastery Level (E.g., "Minimum score of 3 on a rubric scaled 0-4" or "Minimum score of 75%")	Targeted % Achieving Mastery	Outcome
Final Exam	Direct & Internal	BIO 2192	PHS1: Communicate effectively about scientific ideas and topics, in both oral and written formats.	Correct response	70%	Target met
Final Exam	Direct & Internal	BIO 2192	PHS3: Be able to generate and interpret a variety of graphs and/or data	Correct response	70%	Target not met
Final Exam	Direct & Internal	BIO 1492	PHS3: Be able to generate and interpret a variety of graphs and/or data	Correct response	70%	Target met

Summary of Assessment Findings
PHS3 Be Able to generate and interpret a variety of graphs & data sets. If you average all three questions then correct response rate is 78%. For just Bio 2192 the overall average is 62%. For BIO 1492 the overall average is 82%:

BIO 1492 - DNA fingerprinting = 94% correct, n=819

BIO 1492 - Interpret/solve pedigree chart = 60% correct, n=523

BIO 1492 - Interpolate HR from a graph = 91%, n=794

BIO 2192 – Analysis of TSA blood culture and assessment of pathogen potential = 64% correct, n=244/379

PHS1 Communicate effectively about scientific ideas and concepts in both oral and written formats. If you averge both data points then the correct response rate is 82.5%:

BIO 2192: Unknown final report introduction (70% minimum score) = 91% correct, n=323/356

BIO 2192: Unknown final report discussion (70% minimum score) = 74% correct, n=265/356

Interpretation of Assessment Findings

Students are meeting the 70% correct response when you average over different question types for both PHS1 and PHS3. However, there is evidence that students still struggle with the more difficult types of data analysis.

Action Plan in Support of Student Learning (Describe changes to be made that are based at least in part on the assessment interpretation. If the assessment did not yield useful information, describe changes to be made in the assessment methodology and/or criteria.)

PHS 1 Communicate effectively about scientific ideas and concepts in both oral and written formats.

No changes are planned for this outcome.

PHS3 Be able to generate and interpret a variety of graphs and data sets.

Instructors are communicating with each other regarding ways to enhance and emphasize the more difficult concepts of data analysis in both BIO 1492 and BIO 2192.

The biology faculty have decided to continue the assessment and review of the PHS1 and PHS3 for one additional year. This contradicts the cycle plan reported last year. I have made notes to indicate this revisions on the cycle plan included with this report. We have several justifications for this change:

1) Consideration of the anticipated impact of the new NM General Education model on Gen Ed courses that are also included in our PHS degree. These courses may require significant revision of assessment metholdy and tools as we move towards assessment of Essential Skills in those courses, in addition to the PHD degree SLOs.
2) CNM is changing the 5 yr cycle to a 6 yr cycle.
3) Faculty wish to review the PHS3 outcome a 3rd year in order to best understand and re-evaluate the impact of the new BIO 1492 lab manual and the changes to the BIO 2192 midterm exam questions. This is after faculty discussion of changes in instruction approach and training to better support student learning that is reflected on more difficult assessment questions that investigate higher levels on the Bloom's taxonomy.

Please select all of the following that characterize the types of changes described in the above action plan:

☐ Assessment criteria revision   ☒ Assessment methodology revision   ☒ Assignment revision

☐ Budgetary reallocation   ☐ Change in teaching approach   ☐ Course content revision

☐ Curricular Revision   ☒ Faculty training/development   ☒ Process revision

Recommendations, Proposals, and/or Funding Requests	Budget Needed
n/a	

PART 4: REMAINING YEARS IN CURRENT ASSESSMENT CYCLE PLAN (including any revisions) **– OR -- UPCOMING ASSESSMENT CYCLE PLAN** (if this was the final year)

Years of Full Cycle	Next Year's Assessment Focus (Describe how the next planned assessment is expected to provide information that can be used toward improving student learning.)
2016-2021	We will be revising our cycle plans in April 2019 to reflect the CNM policy to change from a 5 yr cycle plan to a 6 yr cycle plan. This is not reflected in the cycle plan included with this report. The cycle plan does reflect our faculty decision to assess PHS1 and PHS3 a 3rd year. See the Action Plan discussion for an explanation.

Graduate Learning Outcomes to Be Assessed	Years in which Assessment Is Planned	Population/Courses to Be Assessed	Planned Assessment Approach
1. Communicate clearly, concisely, and with purpose in oral and written form	Fall 2016-Spring 2017; Fall 2017 – Spring 2018; Fall 2018 – Spring 2019	BIO 2192	Final Exam
2. Demonstrate computational skills with and without the use of technology	Not Assessed by Biology	Assessed by Math Dept	Assessed by Math Dept
3. Be able to generate and interpret a variety of graphs and/or data sets	Fall 2016 – Spring 2017; Fall 2017 – Spring 2018 Fall 2018 – Spring 2019	BIO 1492; BIO 2192	Final Exam Midterm and Final Exam
4. Demonstrate problem solving skills within the context of mathematical	Not Assessed by Biology	Assessed by Math Dept	Assessed by Math Dept
5. Employ critical thinking skills to judge the validity of information from a scientific perspective	TBD in April 2019 cycle plan revision	TBD in April 2019 cycle plan revision	
6. Apply the scientific method to formulate questions, analyze information/data and draw conclusions	TBD in April 2019 cycle plan revision	TBD in April 2019 cycle plan revision	
7. Properly operate laboratory equipment to collect relevant and quality data	TBD in April 2019 cycle plan revision	TBD in April 2019 cycle plan revision	

8. Analyze relevant issues utilizing concepts and evidence from the social/behavioral sciences	Not Assessed by Biology	Assessed by Humanities	Assessed by Humanities