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| **18/19 Program Assessment Report : Bioscience** | | | | | | |
|  | Program outcome 1: Students will demonstrate competence in standard laboratory techniques and use of technology and equipment. | Program outcome 2:  Students will demonstrate the ability to research and communicate (visually, orally and in writing) credible scientific information from a variety of sources. | Program outcome 3:  Students will collect, analyze and interpret data using the scientific method. | Program outcome 4:  Students will calculate, analyze, solve, interpret, and graph quantitative data. | **Comments/ Action Plan** |
| **Introduction to Bioscience Lab Tech. (BIOS 1010):**  **Assessment tool (with short description): Lab Practical Final Exam**  **Benchmark: C or higher**  **Faculty: H. Arvidson & J. Tucker**  **Number of students: 11** | 100% of the students met the benchmark: 5 A’s, 3 B’s, 3 C’s |  |  |  | The following is an excerpt from the practical exam:  Please follow this standard operating procedure. Be sure instructor is observing any step with the (observation) label. Completing steps labeled (observation) without the instructor watching will not result in points. During all parts of the lab, abide by good laboratory practice. Points will be deducted for lapses in technique, spills, and broken glass.  Students that scored a C did not continue in the program either due to poor course grades (not meeting the minimum requirement of a C or better for the final average) or decided to switch majors. |
| **Advanced Bioscience Lab Techniques (BIOS 2410):**  **Assessment tool (with short description): Scientific Research Paper (Molecular Basis of Human Disease)**  **Benchmark: C or Higher**  **Faculty (Full time): J. Tucker**  **Number of students: 9** |  | 90% of the students met the benchmark: 3 A’s, 4 B’s, 2 C’s, 1 D |  |  | Students were required to complete an extensive research paper on a human disease with a direct molecular biology correlation of their choice. They had to present several (minimum 8) research articles discussing the latest breakthroughs in research behind the diseases. The Value rubric was utilized to assess student knowledge and performance on the paper.  Students performed well on the research paper. Students that performed on the lower end (closest to the benchmark) had similar scores in the other assessments make throughout the semester that focused on their lab reports. Some of the biggest point deductions came from grammatical errors and/or the submission not meeting the length requirements. The student that did not meet the benchmark had received a significant point deduction due to submitting the paper late. |
| **Advanced Bioscience Lab Techniques (BIOS 2410):**  **Assessment tool (with short description): Scientific Research Paper (Molecular Basis of Human Disease)**  **Benchmark: C or Higher**  **Faculty (Full time): J. Tucker**  **Number of students: 9** |  |  | 90% of the students met the benchmark: 3 A’s, 4 B’s, 2 C’s, 1 D |  | An additional requirement on the assignment was for students to review and adequately summarize research findings from their cited articles. Points were deducted if they missed critical takeaways from experiments and if they just reworded the researcher’s conclusions. Points were awarded for displays of critical thinking and interpretation by providing their own conclusions of the presented data as well as their own interpretation and potential applications to future research and development of therapeutics.  Students again performed well with this portion of the assignment. Students that struggled with this portion of the assignment also had lower scores on other assignments, such as lab reports, exams, etc. These same students still struggled in their ENGL 1010 & 1030 coursework. The student that did not meet the benchmark had received a significant point deduction due to submitting the paper late. |
| **Pharmaceutical/Toxicology Bioscience (BIOS 2550):**  **Assessment tool (with short description): Analysis of Over the Counter Drugs Lab Report**  **Benchmark: C or Higher**  **Faculty (Full time): J. Tucker**  **Number of students: 11** |  |  | 82% (9 of 11) of the students met the benchmark: 3 A’s, 5 B’s, 1 C, 1 C-, 1 F |  | Students completed a laboratory exercise they had to analyze several OTC drugs to establish baseline data, and then compare the results of testing an unknown compound against their baseline data. Students were required to identify the unknown and provide their rationale for their conclusions based upon their data. They were required to record their procedure, results, and conclusions in their laboratory notebook and submit a detailed lab report. To simulate the process a Quality Assurance (QA) auditor would perform while reviewing reports in the biotech industry, the instructor directly compared the lab report to the information in the lab notebook to ensure that details matched.  The student that failed the assessment was penalized significant points due to late submission and lack of quality in the report. The other student that did not meet the benchmark had a history of struggling on this level of assessment. All of the students had previous experience with this type of QA scrutiny earlier in the course on a smaller lab report. They had already been exposed to the expectations and provided feedback on areas that they could improve prior to the completion of this particular lab report. |

**Important Notes: Please give a brief explanation of the assessment tool used. Remember that you can have more than 4 outcomes and multiple assessment tools if necessary.**

**Reflection question to help you write your comment narrative and choose your benchmarks**

**BASIC PARAMTERS:**

* Your benchmarks should coincide with benchmarks for any external agency you need to report to. DO NOT do double work.
* This first year we are only using two variables- your benchmark and % of students that met the benchmark. If you prefer your benchmark as a number (74% or higher vs. C or higher) obviously you are free to do that. Again, ESPECIALLY if your external accreditor has that benchmark.
* Each faculty member should assess at least one program outcome.
* First year of this you can use 1 assignment in 1 class to measure the outcome if you are allowed to do that from your accrediting agency.
* Subsequent years you will want to use the same assignment across multiple sections to get your numbers up to a data reliable level.

**REFLECTION QUESTIONS: These are only given to help you to reflect, not for you to answer necessarily.**

1. Does my accreditor need different benchmark numbers? SEE parameters above ☺
2. Is there anything unusual about this batch of students I used for the assessment? Example given above \* for PSYC 2010 was actually experienced by a faculty member. Most of the students in a particular human growth and development section on quarters had taken the A & P sequence. It was a fluke; the success rates for the class were through the roof.
3. Do I see a trend on this particular outcome from the previous year? (this is assumed this form will be used in subsequent years)
4. In relation to question above - what did I do differently this year?
5. Is this an introduction class to our program- does that have any impact on success rates?
6. Was the sample size too small? Was it a bad night and all the good students stayed home? (Probably not, but this type of creative brainstorming actually helps us to see patterns that are right in front of our faces that we discount because of their simplicity.