

# Assessment: Annual Report

## Program (SCI) - BS- Biological Sciences

**Unit Mission:** The mission of the BS in Biological Sciences is to provide a high-quality student-centered bachelors program in the sciences to rural Nevada that 1) relates to the economic need within and outside our region for professionals in the biological sciences, 2) relates to the economic need within and outside our region for rural health and medical professionals through university transfer to medical and other professional programs, and 3) relates to the aspect of the GBC mission on university transfer by providing a biological sciences undergraduate degree for transfer to graduate school in biological sciences and related disciplines.

| <i>Outcomes</i>  | <i>Assessment Measures</i>   | <i>Results</i>  | <i>Actions</i>  |
|--|--|---|---|
| <b>Communicate the nature of scientific knowledge and the scientific method</b><br>- Communicate the nature of scientific knowledge and the scientific method and how they were developed.<br><b>Outcome Status:</b> Active<br><b>Assessment Year:</b> 2017-2018, 2018-2019, 2019-2020, 2020-2021<br><b>Start Date:</b> 01/30/2017 | <b>Performance/Presentation -</b><br>Presentations and reports in BIOL 415 – Evolution, the capstone course for the biology degree<br><b>Criterion:</b> 70% of students achieve 70% (C) or better on presentation and reports                      | <b>Reporting Period:</b> 2018-2019<br><b>Criterion Met:</b> Yes<br>All students earned 70% or better on the aggregate grade for presentations and reports. (06/10/2019) | <b>Action:</b> Significant outcome attainment.<br>No action required. (06/10/2019)  |
| <b>Association between biological structure and function</b> - Associate biological structure and function.<br><b>Outcome Status:</b> Active<br><b>Assessment Year:</b> 2018-2019<br><b>Start Date:</b> 09/05/2016   | <b>Internal Tracking</b> - Total grade on summative assessments (ie all assessments) in BIOL 447 – Advanced Comparative Animal Physiology for BIOL-BS students<br><b>Criterion:</b> 70% of students achieve 70% or better on aggregate assessments | <b>Reporting Period:</b> 2018-2019<br><b>Criterion Met:</b> Yes<br>9/12 = 75% of students earned 70% or better on the assessments (06/10/2019)                          | <b>Action:</b> No action required. But the results will be discussed at a department meeting because they were close to the threshold for success. Encouraging students to take a lower division course with the structure-function relationship at its center before taking this advanced course will be discussed. Additionally, more emphasis on this material in BIOL 191 may be required. (06/10/2019) |
| <b>Communicate the genetic</b>   | <b>Internal Tracking</b> - Total grade on  | <b>Reporting Period:</b> 2018-2019  | <b>Action:</b> Significant outcome  |

| <i>Outcomes</i>  | <i>Assessment Measures</i>   | <i>Results</i>   | <i>Actions</i>   |
|--|--|--|--|
| <b>relationships and evolution of organisms.</b> - Communicate the genetic relationships and evolution of organisms.<br><b>Outcome Status:</b> Active<br><b>Assessment Year:</b> 2018-2019<br><b>Start Date:</b> 01/30/2017  | summative assessments (ie all assessments) in BIOL 415 - Evolution for BIOL-BS students<br><b>Criterion:</b> 70% of students achieve 70% or better on aggregate assessments  | <b>Criterion Met:</b> Yes<br>13/14 = 93% of students earned 70% or better on the assessments (06/10/2019)  | attainment.<br>No action required. (06/10/2019)                                    |
| <b>Integrate the complexity of the metabolism of cells and organisms.</b> - Integrate the complexity of the metabolism of cells and organisms.<br><b>Outcome Status:</b> Active<br><b>Assessment Year:</b> 2018-2019<br><b>Start Date:</b> 01/23/2017  | <b>Internal Tracking</b> - Total grade on summative assessments (ie all assessments) in BCH 400 – Introductory Biochemistry for BIOL-BS students<br><b>Criterion:</b> 70% of students achieve 70% or better on aggregate assessments | <b>Reporting Period:</b> 2018-2019<br><b>Criterion Met:</b> Yes<br>11/13 = 85% of students earned 70% or better on the assessments (06/10/2019)  | <b>Action:</b> Significant outcome attainment.<br>No action required. (06/10/2019) |
| <b>Analyze the Organisms and populations respond to and interact</b> - Analyze the complex interplay of how organisms and populations respond to and interact with each other and their environment.<br><b>Outcome Status:</b> Active<br><b>Assessment Year:</b> 2016-2017, 2018-2019<br><b>Start Date:</b> 07/01/2016 | <b>Internal Tracking</b> - Total grade on summative assessments (ie all assessments) in BIOL 341 – Principles of Ecology for BIOL-BS students<br><b>Criterion:</b> 70% of students achieve 70% or better on aggregate assessments    | <b>Reporting Period:</b> 2018-2019<br><b>Criterion Met:</b> Yes<br>14/15 = 93% of students earned 70% or better on the assessments (06/10/2019)  | <b>Action:</b> Significant outcome attainment.<br>No action required. (06/10/2019) |
|  | <b>Internal Tracking</b> - Total grade on summative assessments (ie all assessments) in BIOL 394 - for BIOL-BS students<br><b>Criterion:</b> 70% of students achieve 70% or better on aggregate assessments                          | <b>Reporting Period:</b> 2018-2019<br><b>Criterion Met:</b> Yes<br>11/12 = 92% of students earned 70% or better on the assessments (06/10/2019)  | <b>Action:</b> Significant outcome attainment.<br>No action required. (06/10/2019) |
| <b>Communication effectively</b> - Communicate effectively with regards to complex biological concepts, orally and in writing.<br><b>Outcome Status:</b> Active<br><b>Assessment Year:</b> 2017-2018, 2018-2019, 2019-2020, 2020-2021<br><b>Start Date:</b> 01/30/2017   | <b>Internal Tracking</b> - Oral presentation grade<br><b>Criterion:</b> 70% of students achieve 70% or better on aggregate assessments   | <b>Reporting Period:</b> 2018-2019<br><b>Criterion Met:</b> Yes<br>14/14 = 100% of students earned 70% or better on the assessments (06/10/2019) | <b>Action:</b> Significant outcome attainment.<br>No action required. (06/10/2019) |
|  | <b>Performance/Presentation</b> - Written presentation grade, based on 3 written reports   | <b>Reporting Period:</b> 2018-2019<br><b>Criterion Met:</b> Yes<br>13/14 = 93% of students earned 70% or better on the                           | <b>Action:</b> Significant outcome attainment.<br>No action required. (06/10/2019) |

| <i>Outcomes</i> | <i>Assessment Measures</i>   | <i>Results</i>           | <i>Actions</i>   |
|-----------------|--|--------------------------|--|
|                 | <b>Criterion:</b> 70% of students achieve 70% or better on aggregate assessments | assessments (06/10/2019) | <p><b>Follow-Up:</b> This was the first year that a significant number of students were in the courses used for program outcome assessment.</p> <p>The attainment of the outcomes was high and met the threshold for success in all cases.</p> <p>Outcome attainment for “Outcome Two: Associate biological structure and function” was significantly lower than the others, but still above the threshold for success. Exam scores in this course were rather low over all. This is a comprehensive, advanced course that associates structure (morphology) and function (physiology). This can be difficult for students at the upper division level. (See “Outcome Two” above for details.) This will be discussed in a science department meeting next academic year. (06/10/2019)</p> |