



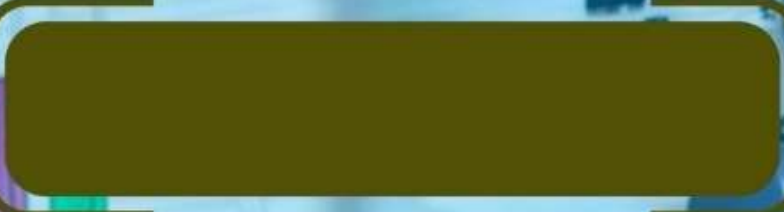
كلية العلوم
College of Science



جامعة الجوف
Jouf University

Bachelor in Biology program

Graduate Attributes
Assessment Report



Introduction:

What are graduate attributes?

Graduate attributes are the skills, abilities, values, principles, and competencies deemed necessary and significant by the program community and relevant stakeholders to prepare a prospective graduate for their professional future. Thus, these attributes must be strengthened for graduates through high-quality and well-aligned academic programs. Graduates must have and develop these qualities on their educational path and use them beyond their educational journey into their professional career.

What is the importance of identifying and assessing graduate attributes?

- Contribution to the achievement of Saudi Vision 2030, particularly concerning education development, high-quality university achievement, and the qualification of human capital and knowledge.
- Fulfillment of the institutional accreditation requirements and the provisions of the National Center for Academic Accreditation and Assessment.
- Alignment of program learning outcomes with local, national, and global labor market requirements and needs.
- Alignment and enhancement of university curricula to meet development and labor market requirements.
- Strengthening the quality practices of faculty members to achieve the intended outcomes relevant to the graduates' attributes; and,
- Providing students with indicators of their progress in acquiring the graduate's attributes to qualify for their future career.

There are two methods for assessing the GAs. One of them is the direct method which is based up on the regular evaluation of students (oral and written exams, quizzes, projects, presentation, etc,

Direct assessment:

- 1- Its based mainly on the results of PLOs.
- 2- Then the GAs are calculated from the concept of consistency between the PLOs and GAs.

PROGRAM LEARNING OUTCOMES ATTAINMENT ANALYSIS*

Table 1: The diagram of direct Assessment of Program Learning outcomes

| Academic year | 1441-1442(2021) | | | | 1443(2022) | | | |
|-------------------------------|-------------------------|---|------------------|----------------------------|----------------------------|-------------------------|--------------------------|----------------------------|
| Method(s) of Assessment level | Direct method | | | Indirect method | Direct method | | | Indirect method |
| | L5 | L6 | | | L7 | | L8 | |
| PLOs | Microtechniques BIO 352 | Pollution and Environmental Protection -BIO 342 | Genetics BIO 353 | Alumni & employers surveys | Molecular Biology/BI O 454 | Field Trainin g BIO 498 | Research Project BIO 499 | Alumni & employers surveys |
| K1 | | | | | | | | |
| K2 | | | | | | | | |
| S1 | | | | | | | | |
| S2 | | | | | | | | |
| S3 | | | | | | | | |
| S4 | | | | | | | | |
| S5 | | | | | | | | |
| V1 | | | | | | | | |
| V2 | | | | | | | | |

- Collected from Report of LOs 2018-2022

According to the consistency between the PLOs and GAs mentioned in the following table the (GAs) were estimated

| Academic year | 1441-1442(2021) | | | 1443(2022) | | | | | |
|-------------------------|-----------------------------|---|---------------------|---------------------------------|------------------------------|--------------------------------|---------------|----------------------------------|------------|
| Method(s) of assessment | Direct method | | | Direct method | | | Actual | Indirect method | Target |
| level | L5 | L6 | | L7 | | L8 | | | |
| PLOs | Micro techniques BIO 352 | Pollution and Environmental Protection - BIO 342 | Genetics BIO 353 | Molecular Biology/BIO 454 | Field Training BIO 498 | Research Project BIO 499 | | Alumni & employers surveys | |
| K1 | | | | 74.86% | | | 74.86% | 86.50% | 70% |
| K2 | | | | | 91.76% | 95.45 % | 93.60% | 85.40% | 70% |
| S1 | | | 81.20% | | 86.64% | 87.62% | 85.15% | 84.40% | 70% |
| S2 | | | | | | 95.87% | 95.87% | 83.80% | 70% |
| S3 | 59.50% | 81.75% | | | 81.75% | | 76.61% | 81.10% | 70% |
| S4 | | | | | | 94.92% | 94.92% | 88.70% | 70% |
| S5 | | | | | 90% | 90% | 90% | 82.60% | 70% |
| V1 | | | | | | 91.9% | 91.9% | 88% | 70% |
| V2 | | | | | 90% | | 90% | 87.50% | 70% |

Matrix of consistency of Graduates Attributes and LO's of biology Program

| | Code | Program Learning Outcomes (PLO'S) | | | | | | | | |
|-----------------------------|----------------|-----------------------------------|----|--------|----------------------------|----|----|----|-------------------------------------|----|
| | | Knowledge & understanding | | Skills | | | | | Values, Autonomy and Responsibility | |
| | | K1 | K2 | S1 | S2 | S3 | S4 | S5 | V1 | V2 |
| Graduates Attributes | PG1 | √ | | | | | | | | |
| | PG2 | | √ | | | | | | | |
| | PG3 | | | √ | | | | | | |
| | PG4 | | | | √ | | | | | |
| | PG5 | | | | | √ | | | | |
| | PG6 | | | | | | √ | | | |
| | PG7 | | | | | | | √ | | |
| | PG8 | | | | | | | | √ | |
| | PG9 | | | | | | | | √ | |
| | PG10 | | | | | | | | | √ |
| Program Mission | Key Components | Education | | | Scientific Research | | | | Community Services | |

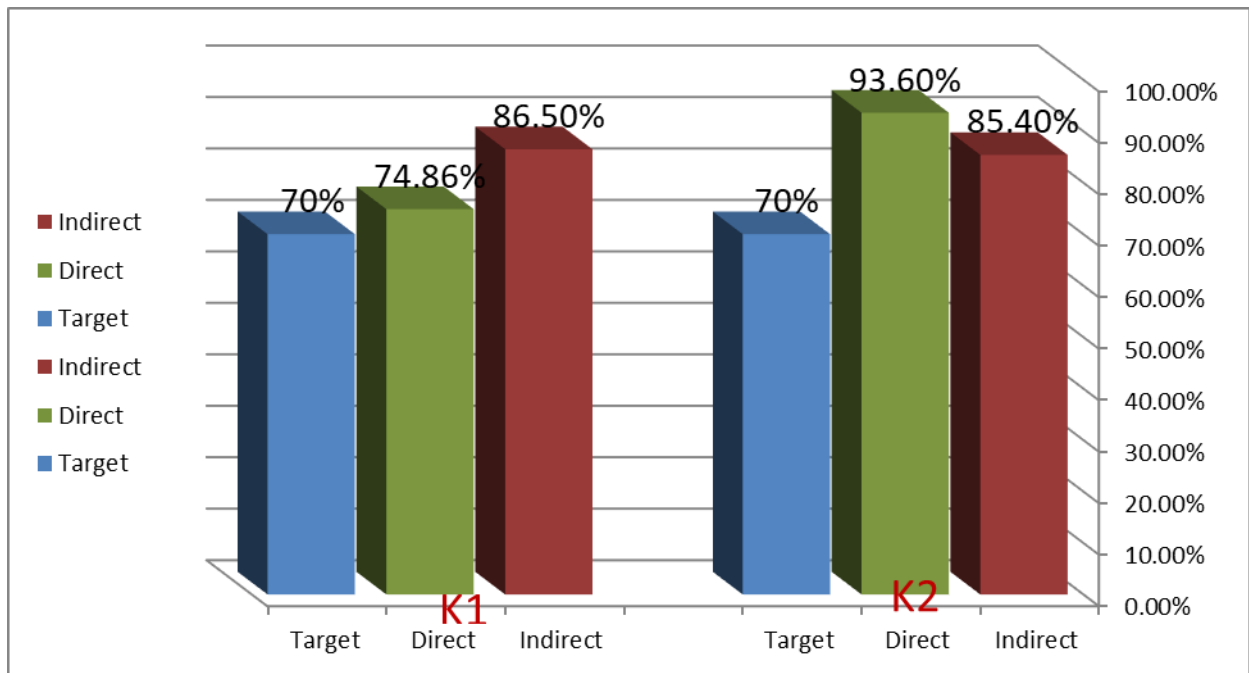


Figure-1: Analysis for the Domain "Knowledge and understanding"

Assessment Results (direct measures): For summative assessment (end of program), the decision was made to focus on the direct assessment for the PLOs related to Knowledge and understanding learning outcomes. Summative data for learning outcome K1 and K2, the assessment was done by following the achievement % reported in Courses: Molecular Biology(BIO 454) for K1 and Field Training (BIO 498) and Research Project (BIO 499) for K2,

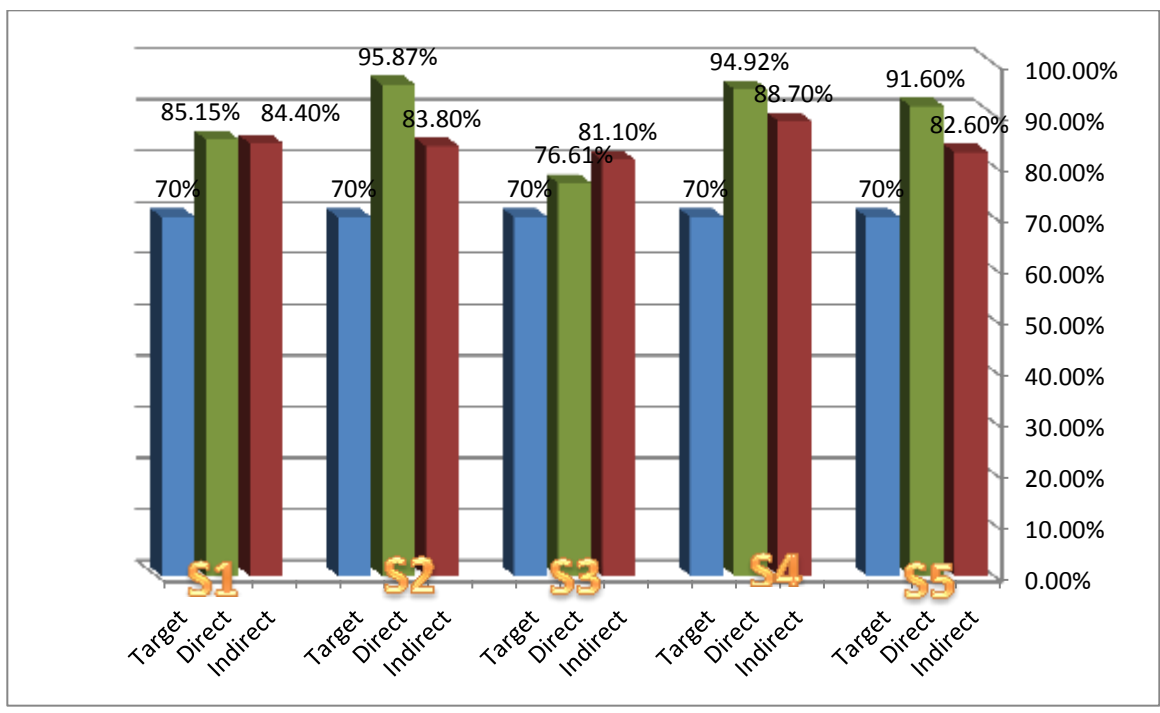
The scoring results to assess student performance were completed by the course coordinator and constructor program staff members. The percent of the students that demonstrated each criterion were as follows: K1 - 74.86% while K2 scores were 91.76% & 95.45 % respectively with average of 93.60%..

Assessment Results (indirect measures):

This analysis was based on two surveys were designed to measure the opinions of alumni as well as employers with the Biology program. The survey used the five -point scale (Likert scale), and the mean and orientation for each statement .The orientation (degree of agreement) was based on the weighted average of the results of the survey and analysis of the results show that : K1 - 86.67%

86.32% for employers and alumni respectively with average of satisfaction 86.50% while average of satisfaction for K2 86.67% & 86.32% for employers and alumni respectively with average of satisfaction 85.40%.

Evaluation and Actions: The result of CLO assessment exceeded the target level of achievement and this might be due to: The appropriateness of teaching and assessment strategies. Good background of students and their high performance in the course. It is recommend to make a periodic assessment of students (end) of each lecture to examine the extent of the student's understanding and benefit from the lecture. As well as the results of the survey and analysis for both employers and alumni show very high degree of show that the percentage of satisfaction.



Assessment Results (direct measures): For summative assessment (end of program), the decision was made to focus on the direct assessment for the PLOs related to Skill was done following the achievement % reported in Courses: (Genetics BIO 353 and Field Training (BIO 498), with the achievement percentage 81.20%, 86.64% and 87.62%, and (Research Project BIO 499), (Microtechniques BIO , Pollution and Environmental Protection -BIO 342 Field Training BIO 498) (59.50%, 81.75% & 88.60%) (Research Project BIO 499 score 90%), and (Field Training BIO 498 and Research Project BIO 499) 90% & 90%. The scoring results to assess student performance were completed by the course coordinator and instructor program staff members. The percent of the students that demonstrated each criterion were as follows: S2, S3, S4, & S5. With average scores 85.15%, 95.87%, 76.61%, 94.92% and 91.60%

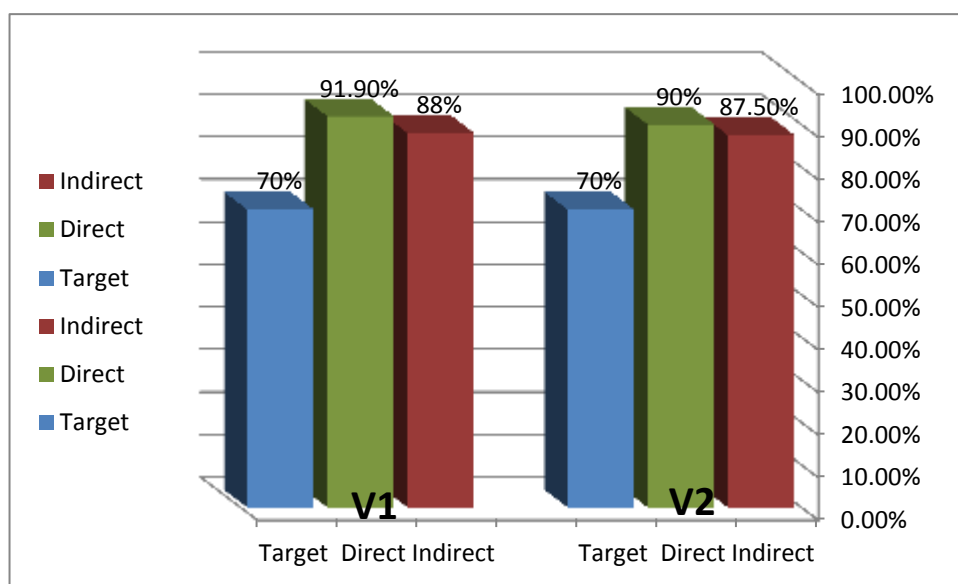
Assessment Results (indirect measures):

This analysis was based on two surveys were designed to measure the opinions of alumni as well as employers with the Biology program. The survey used the five-point scale (Likert scale), and the mean and orientation for each statement. The orientation (degree of agreement) was based on the weighted average of the results of the survey and analysis of the results show that the percentage of satisfaction for S1 (83.33% & 82.11%), 86.67% & 81.05% for S2, 86.67% & 82.11% for S3, 90.00% & 87.37% for S4 and 80.00% & 85.26%, for S5 for employers and alumni respectively with average 84.40%, 83.80%, 81.10%, 88.70% & 82.60% for S1, S2, S3, S4 & S5 respectively.

Evaluation and Actions: The result of CLO assessment exceeded the target for S1, S2, S3, S4 and S5 level of achievement and this might be due to: The appropriateness of teaching and assessment strategies. Good background of

students and their high performance in the course. It is recommended to make a periodic assessment of students (end) of each lecture to examine the extent of the student's understanding and benefit from the lecture while. The result of CLO assessment increased from the target 70% for the Microtechniques BIO 352, course that needs further improvement and interest for teaching methods. As well as the results of the survey and analysis for both employers and alumni show a high degree of satisfaction.

Assessment of "value" Learning outcomes Domain:



Assessment Results (direct measures): For summative assessment (end of program), the decision was made to focus on the direct assessment for the PLOs related to value learning outcomes. Summative data for learning outcome V1 and V2, the assessment was done by following the achievement % reported in Courses: Research Project (BIO 499) and Field Training (BIO 498). The scoring results to assess student performance were completed by the course coordinator and constructor program staff members. The percent of the students that demonstrated each criterion were as follows: V1 91.9%-; V2 – 90% respectively.

Assessment Results (indirect measures):

This analysis was based on two surveys designed to measure the opinions of alumni as well as employers with the Biology program. The survey used the five-point scale (Likert scale), and the mean and orientation for each statement. The orientation (degree of agreement) was based on

the weighted average of the results of the survey and analysis of the results show that the percentage of satisfaction for V1(90% & 84.21%) and 86.67 %&84.21%for V2 for employers and alumni respectively with average of satisfaction 88% & 87.5%for V1 & V2 respectively

Evaluation and Actions: The result of CLO assessment exceeded the target level of achievement and this might be due to: The student has good levels of communication and tries to meet deadlines as well as the student in Research Project (BIO 499) course supervised graduation and became proficient and experienced in the study courses. Also, this course is a practical course that is characterized by the fact that the supervisor of the course is more attached to the student and the number of students in each section did not exceed 4 students, which allows the exchange of experiences between the student and the supervisor and between students each other... It is recommended More activities and tasks should be developed to meet the deficiency in outcome as well as Incorporate more hands-on assignments and tasks in the teaching plan of the course. and Increase training on how to write scientifically and get rid of plagiarism as well as Speech training in front of the group.

As well as the results of the survey and analysis for both employers and alumni show very high degree of show that the percentage of satisfaction.

Recommendations:

- 1- Many Extracurricular activities provide such as clubs, societies, and sports for students may develop skills and experiences beyond the program. There are also opportunities for volunteering or for becoming a student representative.
- 2- A Broad Learning Experience in our program, may be opportunities for broadening students' learning experience through industrial placements, other work-related learning activities.
- 3- There is a wide range of support available to help students in developing the Graduate Attributes.

**Graduate Attributes
(GAs) Assessment**

**In-Direct
measurement**



employers and alumni survey

direct measurement



**Based mainly on the results
from student coursework-
based evaluations**

**A report to measure the extent to which the graduates
attributes are achieved**

| Areas Of Learning Outcomes | Attributes Code | Measuring method | | Target Performance | Timing and Responsibility for Evaluation* |
|----------------------------|-----------------|------------------|----------|--------------------|---|
| | | Direct | Indirect | | |
| Knowledge & Understanding | PG1 | 74.86% | 86.50% | 70% | Every 4 years Quality Committee |
| | PG2 | 93.60% | 85.40% | 70% | |
| Skills | PG3 | 85.15% | 84.40% | 70% | |
| | PG4 | 95.87% | 83.80% | 70% | |
| | PG5 | 76.61% | 81.10% | 70% | |
| | PG6 | 94.92% | 88.70% | 70% | |
| | PG7 | 90% | 82.60% | 70% | |
| Values | PG8 | 91.9% | 88% | 70% | |
| | PG9 | 91.9% | 88% | 70% | |
| | PG10 | 90% | 87.50% | 70% | |

Action Plan Table of the Graduate attribute of the biology Program

Proposed improvement plans: surveys

Action Progress Report

| Recommendations | Actions | Assessment Mechanism or Criteria | Responsible Person | Completed | Start Date | Completion Date |
|--|--|---|--|-----------|---|-----------------|
| Develop a plan that includes Direct Measuring Graduation Attributes | Plan of Measuring Graduate Attributes | Direct & indirect Measuring Graduation Attributes | Program Quality Assurance Committee and Course Instructors / Program Coordinator | DONE | During of academic year 1443 2021/2022 | |
| Formation of a committee to Graduate measure Attributes for Bachelor of biology Program | measure Graduate Attributes committee of biology Program | | | DONE | | |
| Direct Measuring Graduate attribute for the biology Program | Plan of Direct Assessment Graduate Attributes | Direct Graduate attribute Assessment report | DONE | | | |
| Prepare exit exam to measure biology Program Graduate attribute | | exit exam result | DONE | | | |
| Get feedback from the stakeholders about the final draft of biology Program Graduate attribute | stakeholders Graduate attribute Survey questionnaire | Survey Data | DONE | | | |