



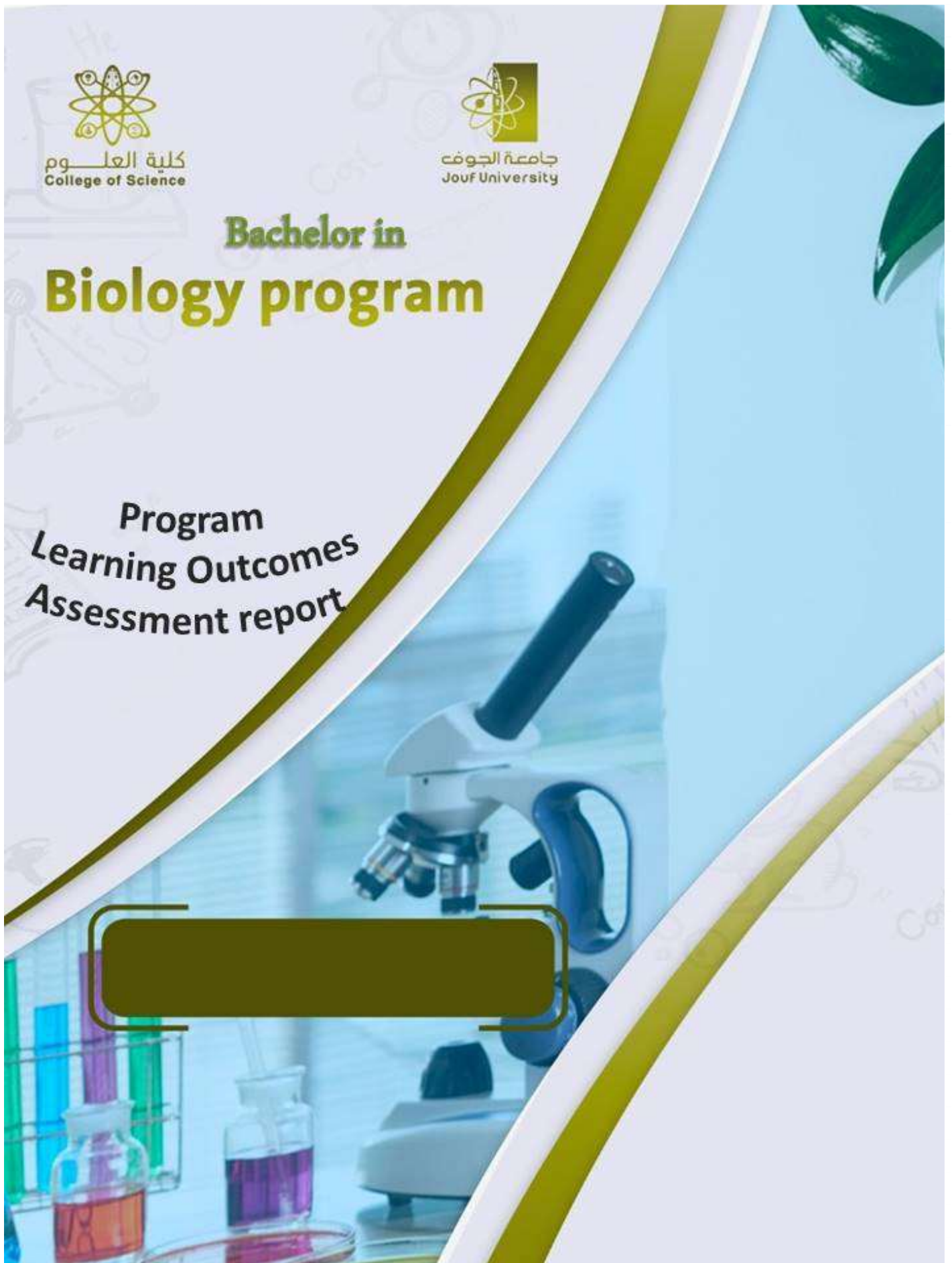
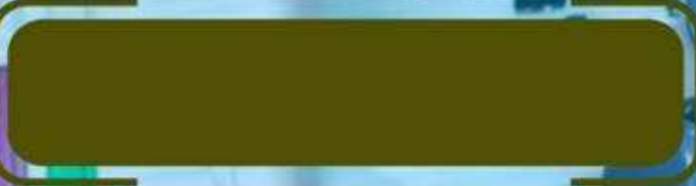
كلية العلوم  
College of Science



جامعة الجوف  
Jouf University

# Bachelor in Biology program

Program  
Learning Outcomes  
Assessment report



KINGDOM OF SAUDI ARABIA  
MINISTRY OF EDUCATION  
JOUF UNIVERSITY  
COLLEGE OF SCIENCE  
BIOLOGY DEPARTMENT



المملكة العربية السعودية  
وزارة التعليم  
جامعة الجوف  
كلية العلوم  
قسم الاحياء

# Program Learning Outcomes Assessment Report

## Bachelor in Biology

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## PROGRAM LEARNING OUTCOMES MAPPING MATRIX

**Table-1: Mapping of Courses to PLOs for the Biology Program**

**program learning Outcomes Mapping Matrix**

Align the program learning outcomes with program courses, according to the following desired levels of performance (**I = Introduced P = Practiced M = Mastered** )

Course code & No.	Program Learning Outcomes								
	Knowledge and understanding		Skills					Values	
	K1	K2	S1	S2	S3	S4	S5	V1	V2
BIO 101	I					I		I	
BIO 211	I			I			I	I	
BIO 221	I			I		I			I
BIO 231	I			I	I				
BIO 212	P			P			P		
BIO 222	P			P		P			P
BIO 241	P					P			P
BIO 251	P			P			P		
BIO 313	P					P		P	
BIO 314	P					P		P	
BIO 315	P					P		P	
BIO 323	P		P					P	
BIO 332	P			P	P				
BIO 352	P					P			P
BIO 316	P			P		P		P	
BIO 317	P					P		P	
BIO 324	P		P					P	
BIO 342	P					P			P
BIO 353	P		P					P	
BIO 361	P					P		P	P
BIO 362	P			P		P			P
BIO 363	P		P			P		P	
BIO 433	M			M					M
BIO 434	M			M					M
BIO 443	M			M					M
BIO 454	M		M					M	
BIO 498		P	P			P		P	P
BIO 471	M						M	M	M

Course code & No.	Program Learning Outcomes								
	Knowledge and understanding		Skills					Values	
	K1	K2	S1	S2	S3	S4	S5	V1	V2
BIO 472	M				M		M	M	
BIO 473	P				P				
BIO 474	M		M						M
BIO 475	P			P	P				
BIO 476		P	P					P	
BIO 418	M			M			M	M	
BIO 419	M				M			M	
BIO 444	M				M		M	M	
BIO 499		M	M	M	M	M	M	M	
BIO 481	I				I		I		
BIO 482		I					I		
BIO 483	M		M					M	
BIO 484	I				I				I
BIO 485	I			I				I	
BIO 486	M						M	M	

## PROGRAM LEARNING OUTCOMES ASSESSMENT PLAN

**Table-2: PLOs Assessment Plan**

Activity 1 (●): Data collection

Activity 2 (■): Evaluate collected data, ad report findings, and propose actions

Activity 3 (▲): Implementation of proposed actions

Program Learning Outcomes	Fall 2020	Spring 2020	Fall 2021	Spring 2021	Fall 2022	Spring 2022
<b>Knowledge and Understanding</b>						
By the end of the program, student will be able to						
PLO:K1: Demonstrate integrated the principles, main concepts, theories and terminology of Biology disciplines.			●	■	▲	
PLO:K2: Demonstrate the recent scientific developments in the fields of biology including techniques and applications of advanced fields of biology.			●	■	▲	
<b>Skills</b>						
By the end of the program student will be able to						
PLO:S1: Formulate, and solve broadly defined scientific problems by applying knowledge of science to areas relevant to Biology		●	■	▲		
PLO:S2: Formulate or design a system, process, procedure or program to meet desired needs in biology.	●	■	▲			
PLO: S3: Evaluate, develop and conduct biological experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions and make a criticism.			●	■	▲	
PLO:S4: Examine microscopic specimens in laboratories basic experiments of biology in safe and effective way				●	■	▲
PLO:S5: Communicate effectively with a range of audiences, work effectively with information technology, and library resources in related to the required biology disciplines.				●	■	▲
<b>Values:</b>						
By the end of the program student will be able to						
PLO:V1 : Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts				●	■	▲
PLO:V2 : Collaborate effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty.			●	■	▲	

## Program Learning Outcomes Assessment Tools

Table-3 Describes how the Program Learning Outcomes are assessed. It contains the method of assessment, data sources with which these assessment processes are carried out, and how the data is collected.

**Table-3 Program Learning Outcomes Assessment Tools**

Method of Assessment	Data Sources	How collected	Performed by	Collected By	Evaluated By
Direct Assessment Method	Course Assessment Report based on student marks	Electronic Copy	Program staff Members	Quality Committee	Quality Committee:
Indirect Assessment Method	Alumni Survey		Alumni	Quality Committee	Quality Committee
	Employer Survey		Employers		Quality Committee





Performance Indicators	Method(s) of Assessment	Where data are collected (summative)	level	Year(s)/semester of data collection	Target% for Performance	Actual% for Performance
<b>KNOWLEDGE AND UNDERSTANDING:</b>						
K1: Demonstrate the integrated principles, concepts, and terminology of the main theories and disciplines of Biology.	Written exams Oral exams. Assignments	Molecular Biology/BIO 454	7 <sup>th</sup>	Fall -2022	70%	74.86%
	Employer Survey Alumni Survey	Online Survey				86.50%
K2: Demonstrate the recent scientific developments in the fields of biology including techniques and applications of advanced fields of biology.	Weekly reports, Final Training report and [Rubrics-based]. Presentation	Field Training BIO 498 Research Project BIO 499	7 <sup>th</sup> 8 <sup>th</sup>	Fall -2022 Spring-2022	70%	93.60%
	Employer Survey Alumni Survey	Online Survey				85.40%

Skill							
S1: Formulate, and solve broadly defined scientific problems by applying knowledge of science to areas relevant to Biology.	Written exams Written and oral quizzes Practical exam Assignment - Practical tests. Written presentation (essay, reflective paper, etc.) /Oral presentation [Rubrics-based]	Genetics BIO 353 Research Project BIO 499	6 <sup>th</sup> 8 <sup>th</sup>	Spring-2021 Spring-2022	70%	83.92%	
	Employer Survey Alumni Survey	Online Survey				84.40%	
S2: Formulate or design a system, process, procedure or program to meet desired needs in biology.	Observations	Research Project BIO 499	8 <sup>th</sup>	Fall -2022	70%	95.87%	
	Employer Survey Alumni Survey	Online Survey				83.80%	
S3: Evaluate, develop and	Written exams	Microtechniques BIO 352	5 <sup>th</sup>		70%	76.61%	

conduct biological experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions and make a criticism.	- Practical tests. Final training report [Rubrics-based]. Weekly reports Final presentation Attendance and participation	Pollution and Environmental Protection -BIO 342 Field Training BIO 498	6 <sup>th</sup> 7 <sup>th</sup>	Fall –2021 Spring-2021  Spring-2022		
	Employer Survey Alumni Survey	Online Survey				81.10%
<b>S4:</b> Examine microscopic specimens in laboratories basic experiments of biology in safe and effective way.	Observation	Research Project BIO 499	8 <sup>th</sup>	Spring-2022	70%	94.92%
	Employer Survey Alumni Survey	Online Survey				88.70%
<b>S5:</b> Communicate effectively with a range of audiences, work effectively with information technology, and library resources in related to the required biology disciplines.	Reports (Rubrics-based) Projects [Rubrics-based]	Research Project BIO 499	8 <sup>th</sup>	Spring-2022	70%	91.60%
	Employer Survey Alumni Survey	Online Survey				82.60%

### 3. Values

V1: Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts.	Reports [Rubrics-based] Projects [Rubrics-based]	Research Project BIO 499	8 <sup>th</sup>	Spring - 2022	70%	91.90%
	Employer Survey Alumni Survey	Online Survey				88%
V2: Collaborate effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty.	Final training Reports Final presentation	Field Training BIO 498	7 <sup>th</sup>	Fall -2022	70%	90%
	Employer Survey Alumni Survey	Online Survey				87.50%

### Analysis for the Domain "Knowledge and understanding" Learning outcomes

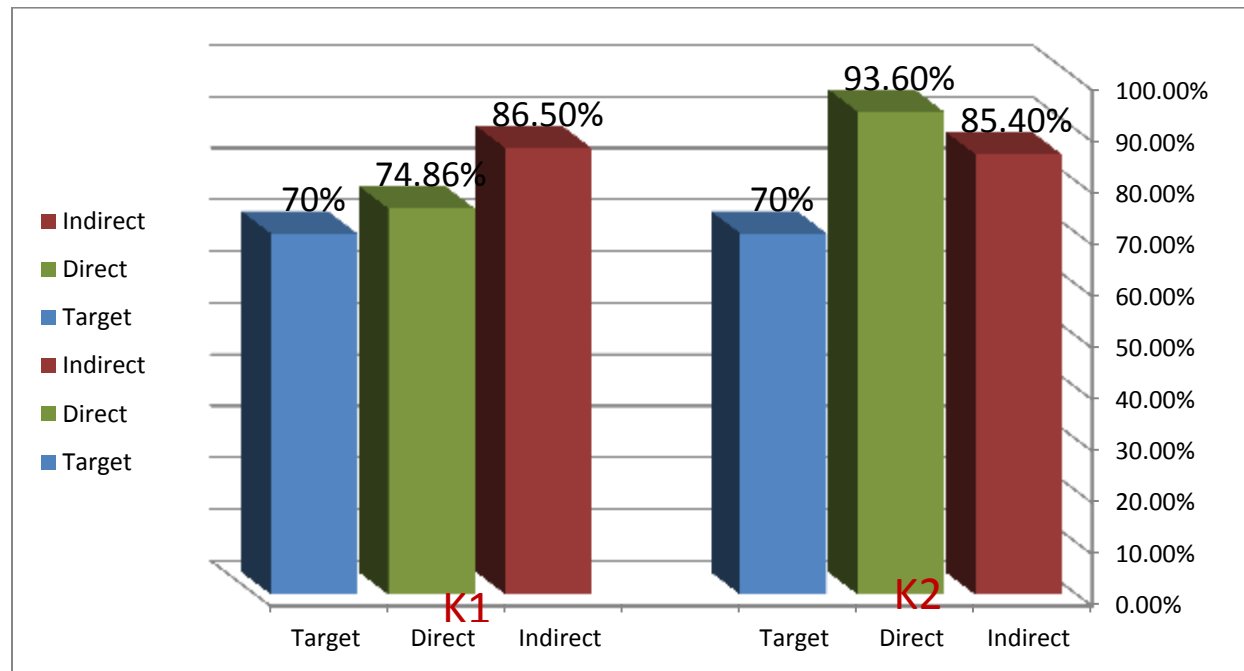


Figure-1: Analysis for the Domain "Knowledge and understanding" Learning outcomes

**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.

### Analysis for the Domain "Skill" Learning outcomes

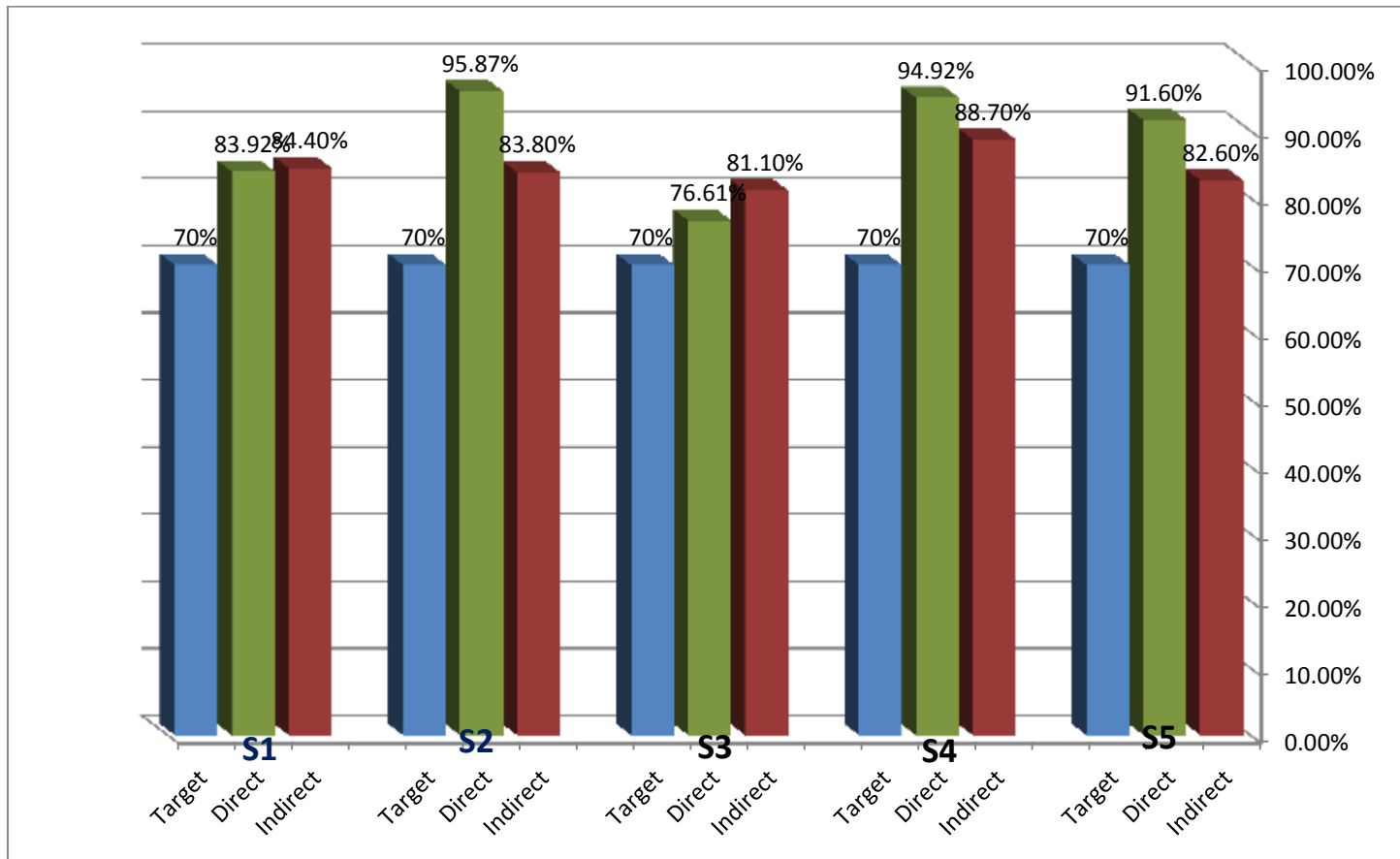


Figure-2: Analysis for the Domain "Skill" Learning outcomes

**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 by following the achievement % reported in Courses: (Genetics BIO 353 and Field Training (BIO 498)), (Research Project BIO 499), (Microtechniques BIO 352, Pollution and Environmental Protection -BIO 342, Field Training BIO 498 (59.50%, 81.75% & 81.75%) (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 constructor program staff members. The percent of the students that demonstrated each criterion were as follows: S1, S2, S3, S4, & S5. With average scores 83.92%, 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 decreased from the targetS3 for the Microtechniques BIO 352, course that need for further improvement and interest for teaching methods. As well as the results of the survey and analysis for both employers and alumni show high degree of show that the percentage of satisfaction.

Figure-3: Analysis for the Domain "value" Learning outcomes

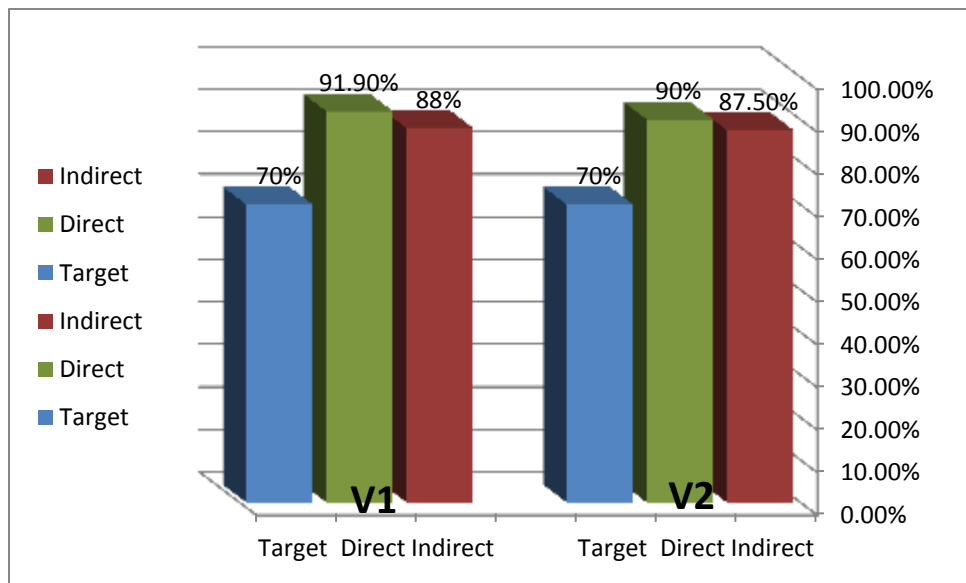


Figure-3: Analysis for the Domain "value" Learning outcomes

**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 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 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 recommend 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.

## **CONTINUOUS IMPROVEMENT:**

### **Course Improvement Plan (CIP):**

The most important part of our continuous improvement plan is a continuous improvement process that deals with an instructor's teaching and assessment plan. This improvement process directly and specifically uses the results of evaluation processes for PLOs as well as for CLOs with information about the instruction and assessment plan used to teach the course.

In this process, the instructor identifies the weak CLO or PLO and then comes up with changes in the teaching plan and/or the assessment plan. The changes suggested here are those that the instructor alone can accomplish to improve the learning outcome. The instructor treats the weakness in a particular CLO or a related PLO by suggesting changes in the teaching/assessment plan to be implemented next time the course is taught. Some examples of the measures that are suggested in a CIP are as follows:

- a) Timing of teaching particular topics
- b) Re-assessment of students with weak CLOs/PLOs after giving them an opportunity to learn

- c) Holding extra classes/tutorials to remove the weakness in relevant CLOs or PLOs
- d) Increasing the number of quizzes or assignments in relevant CLOs or PLOs
- e) Providing students with solutions to problems related to topics in which students face difficulty
- f) Suggesting ways to increase students' interest in topics related to weak CLOs or PLOs
- g) Arranging group discussions among the students
- h) Ensuring that students know in-advance the nature of questions in assessments
- i) Re-designing teaching plan to have more lectures or lab sessions for weak CLOs and/or PLOs

The instructor will do the following to create a CIP report:

- 1) Review the course information: Copy it from CLO/ PLO to the CIP report. This shows the CLO- PLO map and other information about the course.
- 2) Analyze the CLO satisfaction data: Identify the weak CLOs and the assessments that indicate the weakness.
- 3) Analyze the PLO satisfaction data: Identify the weak PLOs and relate them to the CLOs using the CLO-PLO map.

### **Improvement Planning based on Surveys:**

The results of employers surveys:

1- Survey of the opinions This analysis was based on a survey designed to measure the opinions of employers with the Biology program.

The study included three themes as follows:

The first theme: Job skills for Biology graduates.

The second theme: The level of program preparation in the Program Learning Outcomes.

The third theme: The level of importance of these Learning Outcomes to employment experience as shown in table-6 clearly indicate that the PLO attainments as perceived by the employers are well above the target level.

**2- Survey of the opinions This analysis was based on a survey designed to measure the opinions of alumni with the Biology program.**

The study included three themes as follows:

The first theme: Educational skills.

The second theme: The level of program preparation for you in the following Program Learning Outcomes.

The third theme: The level of importance of these Learning Outcomes to your employment experience..

as shown in table-6 clearly indicate that the PLO attainments as perceived by the students are well above the target level.

(Table-7 Response of alumni about the important of program PLOs are well above the target level )





Jouf University  
University Vice Rectorate for Development and  
Quality Deanship of Quality and Academic  
Accreditation

جامعة الجوف  
Jouf University



Results of a survey of employers' opinions on the Biology Program  
graduates

(1443 AH)

College: Science

Program: Bachelor of Biology

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Deanship of Quality and Academic  
Accreditation



## ANALYSIS OF RESULTS OF A SURVEY OF THE OPINIONS OF EMPLOYERS WITH THE BIOLOGY PROGRAM AT JOUF UNIVERSITY (1443 AH)

This analysis was based on a survey designed to measure the opinions of employers with the Biology program.

The study included three themes as follows:

**The first theme:** Job skills for Biology graduates.

**The second theme:** The level of program preparation in the Program Learning Outcomes.

**The third theme:** The level of importance of these Learning Outcomes to employment experience.

The total number who responded to this survey (sample size) was **6**.

Target person	Number
Employers	6

The survey used the five-point scale (Likert scale), and the mean and orientation for each statement and each of the themes were calculated. The orientation (degree of agreement) was based on the weighted average as follows:

Weighted average value	Position (degree of agreement)
Less than 1.80	Very Low (V. Low)
From 1.80 to less than 2.60	Low
From 2.60 to less than 3.40	Average
From 3.40 to less than 4.20	High
Greater than or equal to 4.20	Very High (V. High)

To verify the validity and reliability of the statements in each theme, the validity and reliability (Alpha Cronbach) was tested on the questionnaire as follows:

**Jouf University**  
**University Vice Rectorate for Development and**  
**Validity and reliability coefficient of the questionnaire:**

<b>Theme</b>	<b>Titles of the themes of the questionnaire</b>	<b>Number of items in each theme</b>	<b>Alpha Cronbach reliability coefficient</b>
First	Job skills for Biology graduates.	12	0.966
Second	The level of program preparation in the program learning outcomes.	9	0.935
Third	The level of importance of these learning outcomes to employment experience.	9	0.924

**THE FOLLOWING IS A SUMMARY OF THE RESULTS OF THE SURVEY AND ANALYSIS OF THE RESULTS:**

First theme: Job skills for Biology graduates.

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		% of agreement	Weighted Average	Percentage	Degree of agreement	
	N	%	N	%	N	%	N	%	N	%					
.1	Problem solving skills.	3	50	3	50	0	0	0	0	0	0	100	4.50	90.00	Very High
.2	Initiative and enterprise.	3	50	2	33.3	1	16.7	0	0	0	0	83.3	4.33	86.67	Very High
.3	Planning and organizing.	2	33.3	2	33.3	2	33.3	0	0	0	0	66.6	4.00	80.00	High
.4	Personality skills.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.5	Positive attitude.	3	50	3	50	0	0	0	0	0	0	100	4.50	90.00	Very High
.6	Reliability and punctuality.	2	33.3	3	50	1	16.7	0	0	0	0	83.3	4.17	83.33	High
.7	Self-management.	2	33.3	3	50	1	16.7	0	0	0	0	83.3	4.17	83.33	High
.8	Willingness to learn.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.9	Flexibility and management of priorities.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.10	Communication.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.11	Teamwork.	2	33.3	3	50	1	16.7	0	0	0	0	83.3	4.17	83.33	High
.12	Technology and Digital Skills.	2	33.3	3	50	1	16.7	0	0	0	0	83.3	4.17	83.33	High
<b>Overall result of the theme</b>											<b>90.3</b>	<b>4.3</b>	<b>85.6</b>	<b>Very High</b>	

The brief results in the above table show that: **90.3%** of employers are satisfied with the first theme “Job skills for Biology graduates”. The overall weighted average is **4.3**, which means that the degree of agreement is “**Very High**”.

Second Theme: The level of program preparation in the following Program Learning Outcomes.

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		% of agreement	Weighted Average	Percentage	Degree of agreement	
	N	%	N	%	N	%	N	%	N	%					
<b>1. Knowledge &amp; Understanding</b>															
.1	1.1 Demonstrate integrated the principles, main concepts, theories and terminology of Biology disciplines.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.2	1.2 Demonstrate the recent scientific developments in the fields of biology including techniques and applications of advanced fields of biology.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
<b>2. Skills</b>															
.3	2.1 Formulate, and solve broadly defined scientific problems by applying knowledge of science to areas relevant to Biology.	2	33.3	3	50	1	16.7	0	0	0	0	83.3	4.17	83.33	High
.4	2.2 Formulate or design a system, process, procedure or program to meet desired needs in biology.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.5	2.3 Evaluate, develop and conduct biological experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions and make a criticism.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.6	2.4 Examine microscopic specimens in laboratories basic experiments of biology in safe and effective way.	3	50	3	50	0	0	0	0	0	0	100	4.50	90.00	Very High

7.	2.5 Communicate effectively with a range of audiences, work effectively with information technology, and library resources in related to the required biology disciplines.	2	33.3	2	33.3	2	33.3	0	0	0	0	66.6	4.00	80.00	High
<b>3. Values</b>															
8.	3.1 Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts.	3	50	3	50	0	0	0	0	0	0	100	4.50	90.00	Very High
9.	3.2 Collaborate effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
<b>Overall result of the theme</b>												<b>94.4</b>	<b>4.3</b>	<b>86.3</b>	<b>Very High</b>

The brief results in the above table show that: **94.4%** of employers are satisfied with the second theme “The level of program preparation in the Program Learning Outcomes”. The overall weighted average is **4.3**, which means that the degree of agreement is “**Very High**”.

Third Theme: The level of importance of these Learning Outcomes employment experience.

Statement		Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		% of agreement	Weighted Average	Percentage	Degree of agreement
		N	%	N	%	N	%	N	%	N	%				
<b>1. Knowledge &amp; Understanding</b>															
.1	1.1 Demonstrate integrated the principles, main concepts, theories and terminology of Biology disciplines.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.2	1.2 Demonstrate the recent scientific developments in the fields of biology including techniques and applications of advanced fields of biology.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
<b>2. Skills</b>															
.3	2.1 Formulate, and solve broadly defined scientific problems by applying knowledge of science to areas relevant to Biology.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.4	2.2 Formulate or design a system, process, procedure or program to meet desired needs in biology.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
.5	2.3 Evaluate, develop and conduct biological experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions and make a criticism.	2	33.3	2	33.3	2	33.3	0	0	0	0	66.6	4.00	80.00	High
.6	2.4 Examine microscopic specimens in laboratories basic experiments of biology in safe and effective way.	3	50	3	50	0	0	0	0	0	0	100	4.50	90.00	Very High
.7	2.5 Communicate effectively with a range of audiences, work effectively with information technology, and	2	33.3	2	33.3	2	33.3	0	0	0	0	66.6	4.00	80.00	High

	library resources in related to the required biology disciplines.														
<b>3. Values</b>															
8.	3.1 Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts.	3	50	2	33.3	1	16.7	0	0	0	0	83.3	4.33	86.67	Very High
9.	3.2 Collaborate effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty.	2	33.3	4	66.7	0	0	0	0	0	0	100	4.33	86.67	Very High
												90.7	4.3	85.6	Very High

The brief results in the above table show that: **90.7%** of employers are satisfied with the third theme “The level of importance of Learning Outcomes to employment experience”. The overall weighted average is **4.3**, which means that the degree of agreement is “**Very High**”.

Proposed plans for improvement:

<b>Statement</b>	<b>Items for Improvement</b>
<b>First Theme:</b>	
All statements are high or very high in degree of agreement.	
<b>Second Theme:</b>	
All statements are high or very high in degree of agreement.	
<b>Third theme:</b>	
All statements are high or very high in degree of agreement.	



## Action Plan Progress Report

<b>1. Progress on Implementation of Previous Year's Action Plans</b>						
No.	Actions Planned	Planned Completion Date	Person Responsible	Completed	If Not Complete, Give	
					Reasons	Proposed action
1.	NA This 1 <sup>st</sup>					
2.						

<b>2. Action Plan for Next Year:</b>						
No	Recommendations	Actions	Assessment Mechanism or Criteria	Responsible Person	Start Date	Completion Date
1.	Established academic collaboration and partnership with other education institutions.	Request educational partnerships with government agencies such as hospitals and research centers	Results of a questionnaire.	Department council	1/1/1444 AH	1/9/1444 AH
2.	Training Program, seminars, training, and Workshops for Graduates.	Designing and organizing training and workshops for graduates.	Results of a questionnaire.	Department council	1/1/1444 AH	1/9/1444 AH
Action Plan Analysis (List the strengths and recommendations for improvement of the Action Plan).						



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A survey of the opinions of alumni' satisfaction with the Biology Program  
at Jouf University

(1443 AH)

College: Science

Program: Bachelor of Biology



Deanship of Quality and Academic  
Accreditation

## ANALYSIS OF RESULTS OF A SURVEY OF THE OPINIONS OF ALUMNI WITH THE BIOLOGY PROGRAM AT JOUF UNIVERSITY (1443 AH)

This analysis was based on a survey designed to measure the opinions of alumni with the Biology program.

The study included three themes as follows:

The first theme: Educational skills.

The second theme: The level of program preparation for you in the following Program Learning Outcomes.

The third theme: The level of importance of these Learning Outcomes to your employment experience.

The total number who responded to this survey (sample size) was **19** alumni distributed as follows:

Section	Number	Percentage
Female	11	58%
Male	8	42%
Total	19	100%

The following table shows the different data regarding the Alumni employed:

No.	Item	Number
1	Number of alumni that are self-employed.	11
2	Number of alumni that find a job after their graduation within 6 months.	6
3	Number of alumni that find a job after their graduation more than 6 months.	2

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The survey used the four-point scale (Likert scale), and the mean and orientation for each statement and each of the themes were calculated. The orientation (degree of agreement) was based on the weighted average as follows:

Weighted average value	Position (degree of agreement)
Less than 1.80	Very Low (V. Low)
From 1.80 to less than 2.60	Low
From 2.60 to less than 3.40	Average
From 3.40 to less than 4.20	High
Greater than or equal to 4.20	Very High (V. High)

To verify the validity and reliability of the statements in each theme, the validity and reliability (Alpha Cronbach) was tested on the questionnaire as follows:

#### Validity and reliability coefficient of the questionnaire:

Theme	Titles of the themes of the questionnaire	Number of items in each theme	Alpha Cronbach reliability coefficient
First	Educational skills	12	0.967
Second	The level of program preparation for you in the following Program Learning Outcomes.	9	0.939
Third	The level of importance of these Learning Outcomes to your employment experience.	9	0.941

**THE FOLLOWING IS A SUMMARY OF THE RESULTS OF THE SURVEY AND ANALYSIS OF THE RESULTS:**

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First theme: Educational skills

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		% of agreement	Weighted Average	Percentage	Degree of agreement
	N	%	N	%	N	%	N	%	N	%				
.1	9	47.4	8	42.1	2	10.5	0	0	0	0	89.5	4.37	87.37	Very High
.2	8	42.1	8	42.1	3	15.8	0	0	0	0	84.2	4.26	85.26	Very High
.3	9	47.4	5	26.3	5	26.3	0	0	0	0	73.7	4.21	84.21	Very High
.4	12	63.2	4	21.1	3	15.8	0	0	0	0	84.3	4.47	89.47	Very High
.5	15	78.9	2	10.5	2	10.5	0	0	0	0	89.4	4.68	93.68	Very High
.6	15	78.9	4	21.1	0	0	0	0	0	0	100	4.79	95.79	Very High
.7	13	68.4	5	26.3	1	5.3	0	0	0	0	94.7	4.63	92.63	Very High
.8	14	73.7	4	21.1	1	5.3	0	0	0	0	94.8	4.68	93.68	Very High
.9	16	84.2	3	15.8	0	0	0	0	0	0	100	4.84	96.84	Very High
.10	15	78.9	3	15.8	1	5.3	0	0	0	0	94.7	4.74	94.74	Very High
.11	15	78.9	3	15.8	1	5.3	0	0	0	0	94.7	4.74	94.74	Very High
.12	12	63.2	2	10.5	5	26.3	0	0	0	0	73.7	4.37	87.37	Very High
<b>Overall result of the theme</b>											<b>89.5</b>	<b>4.6</b>	<b>91.3</b>	<b>Very High</b>

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The brief results in the above table show that: **89.5%** of alumni are satisfied with the first theme “Educational skills”. The overall weighted average is **4.6**, which means that the degree of agreement is “**Very High**”.



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Second Theme: The level of program preparation for you in the following Program Learning Outcomes.

Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		% of agreement	Weighted Average	Percentage	Degree of agreement	
	N	%	N	%	N	%	N	%	N	%					
<b>1. Knowledge &amp; Understanding</b>															
.1	1.1 Demonstrate integrated the principles, main concepts, theories and terminology of Biology disciplines.	11	57.9	3	15.8	5	26.3	0	0	0	0	73.7	4.32	86.32	Very High
.2	1.2 Demonstrate the recent scientific developments in the fields of biology including techniques and applications of advanced fields of biology.	9	47.4	6	31.6	3	15.8	1	5.3	0	0	79	4.21	84.21	Very High
<b>2. Skills</b>															
.3	2.1 Formulate, and solve broadly defined scientific problems by applying knowledge of science to areas relevant to Biology.	8	42.1	6	31.6	4	21.1	1	5.3	0	0	73.7	4.11	82.11	High
.4	2.2 Formulate or design a system, process, procedure or program to meet desired needs in biology.	8	42.1	5	26.3	5	26.3	1	5.3	0	0	68.4	4.05	81.05	High
.5	2.3 Evaluate, develop and conduct biological experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions and make a criticism.	9	47.4	4	21.1	5	26.3	1	5.3	0	0	68.5	4.11	82.11	High
.6	2.4 Examine microscopic specimens in laboratories basic experiments of biology in safe and effective way.	12	63.2	3	15.8	3	15.8	1	5.3	0	0	79	4.37	87.37	Very High
.7	2.5 Communicate effectively with a range of audiences, work effectively with information technology, and library resources in related to the	11	57.9	3	15.8	4	21.1	1	5.3	0	0	73.7	4.26	85.26	Very High

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	required biology disciplines.														
<b>3. Values</b>															
8.	3.1 Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts.	12	63.2	4	21.1	3	15.8	0	0	0	0	84.3	4.47	89.47	Very High
9.	3.2 Collaborate effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty.	12	63.2	3	15.8	4	21.1	0	0	0	0	79	4.42	88.42	Very High
<b>Overall result of the theme</b>												<b>75.47</b>	<b>4.25</b>	<b>85.15</b>	<b>Very High</b>

The brief results in the above table show that: **75.47%** of alumni are satisfied with the second theme “The level of program preparation for you in the following Program Learning Outcomes”. The overall weighted average is **4.25**, which means that the degree of agreement is “**Very High**”.

Third Theme: The level of importance of these Learning Outcomes to your employment experience.

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Statement	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		% of agreement	Percentage	Weighted Average	Degree of agreement	
	N	%	N	%	N	%	N	%	N	%					
<b>1. Knowledge &amp; Understanding</b>															
.1	1.1 Demonstrate integrated the principles, main concepts, theories and terminology of Biology disciplines.	12	63.2	4	21.1	1	5.3	1	5.3	1	5.3	84.3	4.32	86.32	Very High
.2	1.2 Demonstrate the recent scientific developments in the fields of biology including techniques and applications of advanced fields of biology.	10	52.6	5	26.3	4	21.1	0	0	0	0	78.9	4.32	86.32	Very High
<b>2. Skills</b>															
.3	2.1 Formulate, and solve broadly defined scientific problems by applying knowledge of science to areas relevant to Biology.	10	52.6	6	31.6	2	10.5	1	5.3	0	0	84.2	4.32	86.32	Very High
.4	2.2 Formulate or design a system, process, procedure or program to meet desired needs in biology.	10	52.6	5	26.3	3	15.8	1	5.3	0	0	78.9	4.26	85.26	Very High
.5	2.3 Evaluate, develop and conduct biological experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions and make a criticism.	12	63.2	4	21.1	3	15.8	0	0	0	0	84.3	4.47	89.47	Very High
.6	2.4 Examine microscopic specimens in laboratories basic experiments of biology in safe and effective way.	10	52.6	5	26.3	3	15.8	1	5.3	0	0	78.9	4.26	85.26	Very High
.7	2.5 Communicate effectively with a range of audiences, work	12	63.2	4	21.1	2	10.5	1	5.3	0	0	84.3	4.42	88.42	Very High

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	effectively with information technology, and library resources in related to the required biology disciplines.														
<b>3. Values</b>															
8.	3.1 Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts.	10	52.6	5	26.3	2	10.5	2	10.5	0	0	78.9	4.21	84.21	Very High
9.	3.2 Collaborate effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty.	8	42.1	8	42.1	2	10.5	1	5.3	0	0	84.2	4.21	84.21	Very High
												<b>81.9</b>	<b>4.3</b>	<b>86.2</b>	<b>Very High</b>

The brief results in the above table show that: **81.9%** of alumni are satisfied with the third theme “The level of importance of these Learning Outcomes to your employment experience”. The overall weighted average is **4.3**, which means that the degree of agreement is “**Very High**”.

Proposed plans for improvement:

Statement s	Items for Improvement
<b>First Theme:</b>	
All statements are very high in degree of agreement.	-
<b>Second Theme:</b>	
All statements are high or very high in degree of agreement.	-
<b>Third theme:</b>	
All statements are very high in degree of agreement.	-

## Action Plan Progress Report

2. Action Plan for Next Year:						
N o.	Recommendations	Actions	Assessment Mechanism or Criteria	Responsible Person	Start Date	Completion Date
1.	The formulation of learning outcomes needs improvement in the text in line with the actual outcomes needed by the graduate and the labor market	Conducting training courses and workshops to cover this aspect	Follow up report	Staff members	1/1/1444 AH	1/9/1444 AH
Action Plan Analysis (List the strengths and recommendations for improvement of the Action Plan).						

## Improvement at the Program Level:

The program objectives set a guideline for program learning outcomes, curriculum development, and teaching procedure. To ensure achievement of the program learning outcomes, a variety of assessment tools as discussed were used. The level of assessment and evaluation process is conducted at the end of every semester, and the results of this assessment process are used to improve the educational process to achieve the targeted program learning outcomes. The process is summarized below which depicts the assessment and evaluation process and hence closing the loop, of program learning outcomes. Note that evaluation is made at two different levels, course-level and program level. The outcome of the evaluation is utilized as feedback for improvement and incorporated into planning to enhance the overall attainment of Program Learning Outcomes

A summary of this improvement is given in the following:

- Wordings of CLOs for all courses have been standardized to comply with the standard definition of learning outcomes. Wherever possible, same action verbs are used for abilities that are similar in nature but are being addressed in different courses. Moreover, CLO statements have been revised and made simple so that the abilities addressed by these CLOs are easily understood.
- Topics to which CLOs relate have been identified and documented within the syllabus to make it easier for the instructor to design assessments addressing a specific CLO.
- Expected Bloom's level has also been made part of the CLO statement.
- Mapping of CLOs to the PLOs has also been revised to ensure that a CLO indeed maps to the right PLO. Also, to the extent possible, each CLO has been mapped to minimum number of PLOs.

Received: 27/9/2022



Program coordinator : Dr. Barakat El-Rashidi