



## Annual Program Report

<b>Program Name:</b>	<b>Bachelor of Physics (B.Sc. Physics)</b>
<b>Qualification Level:</b>	<b>6<sup>th</sup></b>
<b>Department:</b>	<b>Physics</b>
<b>College:</b>	<b>Science</b>
<b>Institution:</b>	<b>Jouf University</b>
<b>Academic Year:</b>	<b>2021-2022</b>
<b>Main Location:</b>	<b>1. Main Campus – Sakaka, Jouf University</b> <b>2. Laqaet Campus (Female) – Sakaka, Jouf University</b>
<b>Branches offering the Program:</b>	<b>N/A</b>

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## A. Implementation of Previous Action Plan

Considering the recommendations of previous year annual report, list the planned actions and their status.

Planned Actions	Responsibility of Action	Planned Completion Date	Level of Completion		If Not Completed	
			Completed	Not Completed	Reasons	Proposed Actions
<p><b>For Male students</b></p> <p>Disallow late registration and late enrollment in classes because this practice is associated with lower grades, lower re-enrollment rates the following term, and lower completion rates. As an alternative, offer “late start” classes for late registrants that begin 2-3 weeks into the term to provide students with shorter, more intensive learning and academic skill-building experiences.</p> <p><b>For Male and Female students</b></p> <p>•Implement the mechanism and procedures of the Student retention policy and increased completion rates.</p>	<p>Program coordinator /Students affairs and alumni committee/ Course coordinator / Academic advising committee</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.01</a> (Program decision to offer “late start” classes for late registrants that begin 2-3 weeks into the term) <a href="#">Annex APR.02</a> Implementat ion of the mechanism and procedures of the Student retention policy and increased completion rates</p>		-	-
<p><b>For male and female students</b></p> <p>• Choose fitting contents for the course of study in such a way students can adjust to the new environment.</p> <p>• Implement the mechanism and procedures of the Student retention policy and increased completion rates</p>	<p>Students affairs and alumni committee/ Academic advising committee/ Course coordinator</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.03</a> Example of orientation course of PHS 101 <a href="#">Annex APR.02</a> Implementati on of the mechanism and procedures of the Student retention policy and increased completion rates</p>		-	-

<p><u>At the level of the program</u></p> <ul style="list-style-type: none"> <li>Review the teaching and learning strategies and update the assessments methods.</li> <li>Review the alignments between PLOs/CLOs and teaching and learning strategies and the assessments methods.</li> </ul>	<p>Study plan committee/ Quality committee/Course coordinator</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.04</a> (PS) <a href="#">Annex APR 0.5a</a> (consistency between PLOs and CLOs) <a href="#">Annex APR 0.5b</a> (consistency between PTLs and CTLS) <a href="#">Annex APR 0.5c</a> (consistency between PAM and CAM)</p>			
<p><u>At the level of the Program</u></p> <p>Develop a PLOs Assessment Plan based on the capstone courses for Physics Program.</p>	<p>Study plan and quality committee/Quality committee</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.06</a> (PLO assessment)</p>		-	-
<p><u>At the level of the Program</u></p> <p>Add extra-curricular activities to the program and courses.</p>	<p>Study plan and quality committee/Quality committee</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.04</a> PS <a href="#">Annex APR 0.5d</a> (consistency between P. extra-curricular activities and C. extra-curricular activities)</p>			
<p><u>At the level of the Program</u></p> <p>Develop mechanisms and procedures at the program level to determine the minimum percentage plagiarism for students.</p>	<p>Academic Affairs Committee</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.07</a> (mechanisms and procedures to determine the minimum citation percentage)</p>			
<p><u>At the level of the Program</u></p> <p>Developing mechanisms and procedures at the program level for the feedback to students</p>	<p>Quality committee</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.08</a> mechanisms and procedures for the feedback to students</p>			
<p>Update the practical Handbook of Experiments (Physics program)</p>	<p>Laboratories committee</p>	<p>Fall-2020 &amp; Spring-2021</p>	<p>Yes <a href="#">Annex APR.09</a> (practical Handbook of Experiments)</p>			

<p><u>For male and Female section</u> Provide student with information about the course at the first week of the begin of each semester</p>	Course instructor/E-Learning Committee	Fall-2020 & Spring-2021	Yes <a href="#">Annex APR.010</a> (Information about the course at the first week of the begin of each semester)			
<p><u>At the level of the Program</u> Increase contacts with companies to cover more areas. Holding meetings with field training students to be more aware and familiar with all aspects of training.</p>	Training Committee	Fall-2020 & Spring-2021	Yes <a href="#">Annex APR.011a</a> Field training bodies approved by the program <a href="#">Annex APR.011b</a> meetings with field training students			
<p><u>For female sections</u> Support joint interaction between male and female staff in the field of research.</p>	Scientific Research Committee	Fall-2020 & Spring-2021	Yes <a href="#">Annex APR.012</a> (Some joint research or joint project)			
<p><u>For male and female students</u> Encouraging students to participate in research activities</p>	Course instructor/Scientific Research Committee	Fall-2020 & Spring-2021	Yes <a href="#">Annex APR.013</a> & <a href="#">Annex 0.13a</a> (Example of students participation in research activities)			
<p><u>At the level of the Program</u> Increase the program partnership with the community.</p>	Committee of community service	Fall-2020 & Spring-2021	Yes <a href="#">Annex APR.014</a> (Example of program Partnership with the community)			
<p><u>At the level of the Program</u> Follow up all aspects of operational plan.</p>	Operational plan and KPIs committee	Fall-2020 & Spring-2021	Yes <a href="#">Annex APR.015</a> (Report of the operational plan)			

## B. Program Statistics

### 1. Students Statistics (in the year concerned)

No.	Item	Results
1	Number of students who started the program	63
2	Number of students who graduated	45
3	Number of students who completed major tracks within the program (if applicable)	Not applicable
4	a. Number of students who completed the program in the minimal time	16
5	a. Percentage of students who completed the program in the minimal time (Completion rate)	25.2%
6	Number of students who completed an intermediate award specified as an early exit point (if any)	Not applicable
7	Percentage of students who completed an intermediate award specified as an early exit point (if any)	Not applicable

#### Comment on any special or unusual factors that might have affected the completion rates:

The completion rate is increased compared to 2020-2021, but this percentage still the completion rate is low, KPI- P – 04.

However, the completion rate for the [male section](#) remains low compared to the [female section](#), which exceeded the target of KPI- P – 04.

The Actual value of student's completion rate (KPI- P – 04) in the program indicates the percentage of students who entered the undergraduate program and completed the program in minimum time; It is noted from the data obtained of completion rate for the female section (30%) completely higher than the corresponding values in the student sector (17%). The total average value has achieved the target for this year (25%) and higher than the internal benchmark (21.5%). The male section is slightly less than the target and internal benchmark. The target (75%) was not achieved for either the [male students](#) or the [female students](#).

#### The most reasons for the low completion rate, particularly for:

##### By the analysis of the cohort

1. Failure of students to adhere to the timeline for registering courses according to the program's study plan.
2. Some students apologize or withdraw for one or more semesters for various reasons.
3. Several students are not from Al-Jouf region.

### 2. Cohort Analysis of Current Graduate Batch

Student Categories		Total cohort enrollment	Withdrawn	Retained till year end	Not passed	Passed	Passing rate
Years							
Three Years Ago	M	23	0	23	6	17	73%
	F	40	0	40	2	38	95%
	<b>Total</b>	63	0	63	8	55	87%
Two Years Ago	M	17	1	16	0	16	100%
	F	38	1	37	3	34	91%
	<b>Total</b>	55	2	53	3	50	94%
Last Year	M	16	2	14	4	10	71%
	F	34	0	34	12	22	64.7%
	<b>Total</b>	50	2	48	16	32	66%
Current Year	M	10	0	10	6	4	40%
	F	22	1	21	9	12	57.14%
	<b>Total</b>	32	1	31	15	16	51.61%

#### Comments on the results:

- Female students who enrolled the program is higher than the male students.
- The number of those who graduated in 2020-2021 at the end of the first and second semesters = 16 with a completion rate of 51.61%. [Female graduates](#) students (57%) are more than male graduates (40%).
- The percentage of students who enter the program and successfully complete the first year (of KPI- P – 05) has been increased in 2021/2022 compared to the last academic year 2020/2021. However the actual benchmark (83%) has been increased for the program but the actual value of male section (60%) is still lower than the value of female section (88%) and of the value program (83%). However, the targeted level has been achieved for [female students](#).
- Some involvement factors leads also to a decrease in the completion rate as well as First-year students retention rate are for [male students](#):
  - (a) student-faculty interaction,
  - (b) the role of mentorship, and
  - (c) participation in student clubs.

\* add more rows for further years ( if needed )

\*\* attach separate cohort analysis report for each branch ([cohort analysis report](#))

### 3. Analysis of Program Statistics

(including strengths, areas for improvement, and priorities for improvement)

#### Strengths :

1. The passing rate is high in the first and second years.
2. The number of retained students till year end is stable to a large extent.
3. The withdrawal rate is considered low over the years and compared to 2020-2021, especially for the first year.
4. The ratio of completion rate is enhanced for both [male](#) and [female students](#) compared to APR 2020-2021.
5. The ratio of completion rate is increased in the [female](#) students for the same semester, which may reflect that the female students are more interest in studying Physics than the [male students](#).

#### Areas for Improvement:

##### **Completion rate**

It is clear that the completion rate is increasing over the last three years ([trend analysis](#)). But it still low, and the program works to improve it.

##### [For Male and Female Students](#)

- Improvement of the involvement factors that leads to a decrease in the completion rate: **(a)** student-faculty interaction, **(b)** the role of mentorship, and **(c)** participation in student clubs as well as **(d)** motivation for extracurricular activities.
- Disallow late registration and late enrollment in classes because this practice is associated with lower grades, lower re-enrollment rates the following term, and lower completion rates. As an alternative, offer “late start” classes for late registrants that begin 2-3 weeks into the term to provide students with shorter, more intensive learning and academic skill-building experiences.
- Intensifying academic advising for students who have failed to identify the real reasons for their failure to complete their studies on time and addressing the problem of withdrawal.
- Monitoring the implement of the mechanism and procedures of the student retention policy and increased completion rates.

**✚ Improving the passing rates in the final years**

**For Male Students**

- Intensifying academic advising for students who have failed to identify the real reasons for their failure to complete their studies.
- Improve the student soft skills (i.e., team work, self-learning, problem solving, critical thinking...).
- Follow up of student's performance and results with comparisons of results with previous one.

**Priorities for Improvement:**

**✚ Completion rate**

**For Male and Female Students**

✚ Improvement of the involvement factors that leads to a decrease in the completion rat: (a) student-faculty interaction, (b) the role of mentorship, and (c) participation in student organizations as well as (d) motivation for extracurricular activities.

✚ Monitoring the implement the mechanism and procedures of the student retention policy and increased completion rates.

**✚ Improving the passing rates in the final years**

**For Male Students**

- Improve the student soft skills (i.e., team work, self-learning, problem solving, critical thinking...).

**C. Program Learning Outcomes Assessment**

**1. Program Learning Outcomes Assessment Results.**

**\*\*\*Direct assessment from courses\*\*\***

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results	
				Male	Female
<b>Knowledge and Understanding</b>					
K1	<b>Explore</b> fundamental concepts, facts and principles, and applications of physics.	Direct PLOs assessment from courses	75%	70%	74%
K2	<b>Demonstrate</b> mathematical theories and commonly used means in Physics.			70%	75%
K3	<b>Critique</b> theories, concepts and applications of modern physics.	Direct PLOs assessment from courses		87%	86%
K4	<b>Outline</b> processes, materials, techniques, practices, conventions and/or terminology in physics field in various complex contexts	Direct PLOs assessment from courses		88%	87%
<b>Skills</b>					
S1	<b>Solve</b> broadly defined scientific problems by applying knowledge of mathematics and science to areas relevant to physics.	Direct PLOs assessment from courses	80%	76%	72%
S2	<b>Formulate</b> and/or design a system, process, procedure or program to meet desired needs independently	Direct PLOs assessment from courses		88%	75%
S3	<b>Analyze</b> practical experiments and hypotheses to solve problems in Physics	Direct PLOs assessment from		74%	78%



		courses			
<b>Values</b>					
V1	<b>Sustain</b> effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts	Direct PLOs assessment from courses	80%	87 %	82%
V2	<b>Collaborate</b> effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty	Direct PLOs assessment from courses		78%	86%
V3	<b>Learn</b> self-sufficiently and continuously to improve social and professional leadership value	Direct PLOs assessment from courses		72%	89%

### \*\*\*Indirect assessment from surveys\*\*\*

\* CES: Course Evaluation Survey; PES: Program Evaluation Survey; AS: Alumni Survey; ES: Employer Survey; ExA: Extracurricular activities based rubrics

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target (weigh out of 5)	Results			
				*AS		*ES	
				M	F	M	F
<b>Knowledge and Understanding</b>							
K1	<b>Explore</b> fundamental concepts, facts and principles, and applications of physics.	Indirect from Surveys	3.75	5	4	3.75	5.00
K2	<b>Demonstrate</b> mathematical theories and commonly used means in Physics.			4.17	4.43	3.75	5.00
K3	<b>Critique</b> theories, concepts and applications of modern physics.			4.17	3.43	3.44	5.00
K4	<b>Outline</b> processes, materials, techniques, practices, conventions and/or terminology in physics field in various complex contexts			3.33	4.43	4.06	5.00
<b>Skills</b>							
S1	<b>Solve</b> broadly defined scientific problems by applying knowledge of mathematics and science to areas relevant to physics.	Indirect from Surveys	4	5	4.43	3.44	5.00
S2	<b>Formulate</b> and/or design a system, process, procedure or program to meet desired needs independently			5	4.57	3.44	5.00
S3	<b>Analyze</b> practical experiments and hypotheses to solve problems in Physics			5	4.43	4.06	5.00
<b>Values</b>							
V1	<b>Sustain</b> effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts	Indirect from Surveys	4	3.33	4.57	3.44	5.00
V2	<b>Collaborate</b> effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty			4.17	4.71	4.06	5

V 3	Learn self-sufficiently and continuously to improve social and professional leadership value			5	4.71	3.75	5.00
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**Comments on the Program Learning Outcome Assessment results.**

**For male section**

1. Four PLOs out of 10 showed achievement equal to or above the target level.

**For female section**

1. Six PLOs out of 10 showed achievement equal to or above the target level.

**At the level of the program**

Six PLOs have been achieved. However, the **male and female students** lack the ability to apply their knowledge of principles and concepts for physics, and to identify, formulate, and solve complex physics problems. More effort has been done in regard to this issue. At the level of the program, there is also a lack of problem-solving skills. More work has to be done in terms of encouraging students to do more formal assessments. More work has to be done in terms of encouraging students to do more formal assessments and enhancing the self-learning skills.

\* Include the results of measured learning outcomes during the year of the report according to the program plan for measuring learning outcomes

\*\* Attach a separate report on the program learning outcomes assessment results for male and female sections and for each branch (if any)-[Annex APR.C1](#) and [Annex APR.C1](#).

**2. Analysis of Program Learning Outcomes Assessment**

(including strengths, Areas for Improvement, and priorities for improvement)

**Strengths :**

**For male section**

PLOs K3, K4, S2, V1 were fairly achieved based on the direct and indirect assessments of the learning outcomes. This shows that four out of ten of the program learning outcomes has been successfully achieved. More attention has to be paid for PLOs K1, K2, S1, S2, V2 and V3.

**For Female section**

PLOs K3, K4 and S2 were fairly achieved based on the direct and indirect assessments of the learning outcomes. This shows that four out of ten of the program learning outcomes has been successfully achieved. More attention has to be paid for PLOs K1, K2, S1 and S2.

**At the level of the program**

There is a balance between the results of learning outcomes for male and female students, with the exception of the domain values, which was achieved in the female section.

**Areas for Improvement:**

**For Male Section**

PLOs V2 and V3 were not fairly achieved. More work has to be done in terms of Enhancing students' abilities to work as a team work and enhance self-learning skills.

**For both male and female section**

- PLOs K1, K2, S1, and S2 were not fairly achieved. More work has to be done in terms of fundamental knowledge and understanding of and its application in formulating solving and different complex physics problem.
- Improve the English language of the students.

**Priorities for Improvement:**

**For Male Section**

- PLOs V2 and V3 represent priority for improvement in particular for male students. More work has to be done in terms of enhancing students' abilities to work as a team and enhance self-learning skills.

**For both male and female section**

- PLOs K1, K2, S1 and S2 represent priority for improvement. It is recommended to enhance students' abilities to improve their knowledge and understanding of Physics Science

and its application in formulating solving and different complex physics problem.

- Improve the English language of the students.

## D. Summary of Course Reports

### 1. Teaching of Planned Courses / Units

List the courses / units that were planned and not taught during the academic year, indicating the reasons and compensating actions.

Course	Units/Topics	Reasons	Compensating Actions
<b>Both section</b> General Physics (1)- PHS 101	Basic concepts in viscosity theory	Many vacancies during the lectures times	-The students participate in presentations on these topics (using Self-learning teaching strategies). -Oral discussion and Students' participation in the lessons on this subject.
<b>Both section</b> General Physics (2)- PHS 202	Oscillatory Motion, / Sound waves.	The topics of the course needed more times	The student participates with presentation and practical experiment for these topics.
<b>Male section</b> Electromagnetism PHS 231	Concepts of Electromagnetic waves	<ul style="list-style-type: none"> <li>• There are several weekly holidays in the first semester.</li> <li>• Allocating lectures to review some mathematical concepts that are directly related to the course</li> </ul>	Dedicate a chapter on the definition and applications of electromagnetic waves
<b>Female section</b> Mathematical Physic (2) PHS 304	Applications on Electricity and Optics	Due to the existence of study holidays that correspond to the date of the course	Oral discussion and students' participation in the lessons on this subject
<b>Both section</b> Solis state Lab PHS 463	One experiment haven't been taught practically	because it is need more components	The experiments have been taught theoretical
<b>Female section</b> Nuclear Physics Lab PHS 473	One experiment haven't been taught practically	Because it is need more components	The experiments have been taught theoretically, and a video was shown to explain the practical side, then the results were analyzed and represented graphically

### 2. Courses with Variations

List courses with marked variations in results that are stated in the course reports, including: (completion rate, grade distribution, student results, etc.), and giving reasons for these variations and actions taken for improvement.

The following strategy has been adopted in identifying abnormal courses completion rates, skewed grade distribution and/or trends over time which includes;

1. Courses with student's failure rate (total or section wise) equal to or more than 25% are considered as abnormally low completion rates.
2. Grade Inflation Criteria:

3. Percentage of students receiving (A+, A, and B+)  $\geq 50\%$  for the number of students  $> 10$ .
4. Percentage of students receiving (A+, A, and B+)  $\geq 70\%$  for the number of students  $\leq 10$ .
5. Grade Deflation Criteria:
6. Percentage of students receiving (D, F)  $\geq 50\%$
7. Courses showing decrease in completion rate over time equal to or more than 25% are considered as courses with a trend of decreasing quality.
8. Courses showing bell-shaped curve in grade distribution and/or improvement in completion
9. Rates over previous years will be considered as courses with outstanding performance and recognition will be provided to encourage continuous improvement.

Course Name & Code	variation	Reasons for variation	Actions taken
<b>LEVEL 3</b>			
General physics 2 PHS 202 ( <b>female section</b> )	a grade deflation (i.e., D, F) $\geq 50\%$	The low level of students in the basics of mathematics.	Training students on more solved problems to increase their ability on solving problems
<b>LEVEL 4</b>			
Mathematical Physics (1) PHS 203 ( <b>Male &amp; Female section</b> )	a grade deflation (i.e., D, F) $\geq 50\%$	The low level of students in the basics of mathematics.	<ul style="list-style-type: none"> <li>-The use of formative assessment on a regular basis to confront the continuous absence of students</li> <li>-The use of the Presentation (based rubrics) assessment method on a regular basis to enhance self-learning skills,</li> <li>- Allocate more time to problem-solving strategies assessed via summative and formative methods.</li> </ul>
Classical Mechanics 2 PHS 212 ( <b>Male &amp; Female section</b> )	a grade deflation (i.e., D, F) $\geq 50\%$	<ul style="list-style-type: none"> <li>-Basic math is the main problematic for the majority of students.</li> <li>-repeatedly absent from lectures and exercises.</li> </ul>	<ul style="list-style-type: none"> <li>- Improve the assessment strategy based on the level of the students:</li> <li>- The use of formative assessment on a regular basis to confront the continuous absence of students,</li> <li>-The use of Presentation (based rubrics) assessment method on a regular basis to enhance the self-learning skills,</li> <li>- Allocate more time to problem solving strategies assessed via summative and formative methods.</li> </ul>
Waves and Vibrations PHS 213	a grade deflation (i.e., $DF > 50$ ).	-This result is associated with	The use of formative assessment on a regular

(male section)		repeatedly absent from lectures and exercises. In addition, not returning assignments on time returning them at all.  -Basic math is the main problem for the majority of students.	basis to confront the continuous absence of students, -The use of Presentation (based rubrics) assessment method on a regular basis to enhance the self-learning skills, -Allocate more time to problem solving strategies assessed via summative and formative methods.
Electromagnetism PHS 231 (Male & Female section)	a grade deflation (i.e., $DF > 50$ ).	-Basic math is the main problematic for the majority of students. -repeatedly absent from lectures and exercises.	-The use of formative assessment on a regular basis to confront the continuous absence of students, -The use of Presentation (based rubrics) assessment method on a regular basis to enhance the self-learning skills, -Allocate more time to problem solving strategies assessed via summative and formative methods.
<b>LEVEL 5</b>			
Thermal & Statistical Physics Phs321 (female section)	a grade deflation (i.e., $DF > 50$ ).	-	Providing students with more skills in the field of mathematics - The lecture must be inside the halls at an appropriate time.
Electromagnetic Laboratory PHS 332 (female section)	Grade Inflation (i.e., A+, A, and B+) $\geq 50$	-	-Training students on more solved problems to increase their ability on solving problems. -Directing female students to attend lectures through lectures on academic advising.
Modern Physics PHS 341 (Male & Female section)	a grade deflation (i.e., $DF > 50$ ).	-repeatedly absent from lectures and exercises.	-Review and improve the teaching strategies and assessment methods. -The regular use of formative assessment to address students' persistent absences. -Give problem-solving teaching strategies that are evaluated using different

			assessment methods greater time.
Optics Phs 351 <b>(female section)</b>	a grade deflation (i.e., (D,F) > 50).	-Students are weak in English. - repeatedly absent from lectures and exercises	-Encourage the use of the English language outside the classroom, when doing extra-curricular activities for example. -Immediate and specific feedback provided to students.
Optics Lab (1) PHS352 <b>(Male &amp; Female)</b>	a grade deflation (i.e., (D,F) > 50).	Students frequently miss lectures and assignments; many have poor English skills.	-The regular use of formative assessment to address students' ongoing absence -The regular use of the presentation-based rubrics evaluation approach to improve students' self-learning abilities, -Give problem-solving techniques that are evaluated using summative and formative methods greater time.
<b>LEVEL 6</b>			
Semiconductor Physics PHS 365 <b>(male section)</b>	a grade deflation (i.e., (D,F) > 50).	-	-Improve the assessment strategy based on the level of the students: -Training students on more solved problems to increase their ability on solving problems. -Directing female students to attend lectures through lectures on academic advising.
<b>(female section)</b>	Grade Inflation (A+, A, and B+)>=70		
<b>LEVEL 7</b>			
Quantum Mechanics1 PHS 422 <b>(Male &amp; Female section)</b>	a grade deflation (i.e., (D,F) > 50).	-	Maintain and improve the teaching and assessment strategies.
<b>LEVEL 8</b>			
project PHS 499 <b>(Male &amp; Female section)</b>	Grade Inflation (A+, A, and B+)>=70	-	Maintain and improve the teaching and assessment strategies.

### 3. Result Analysis of Course Reports

(including strengths, Areas for Improvement:, and priorities for improvement)

Strengths :

### **For both Male and Female section**

- The results show an increase in students' overall evaluation of the quality of their learning experiences in the academic year 2021-2022 compared to 2020-2021 which may be rendered to the continuous improvement of the teaching starting, topics, and facilities.
- The sources of helping students during the course (faculty office hours and reference material) were clear.
- There was an effective use of technology to support the teaching methods
- The resources of course materials were available.

### **Areas for Improvement:**

#### **For both Male and Female section**

- Covering the entire course content
- Decreasing the student's failure rate.
- Obtain courses with outstanding performance.
- Improve students' math skills
- Efforts should be made to increase the level of English proficiency among students

### **Priorities for Improvement:**

#### **For both Male and Female section**

- Decreasing the student's failure rate.
- Obtain courses with outstanding performance.
- Improve students' math skills.
- Efforts should be made to increase the level of English proficiency among students.

## **E. Program Activities**

### **1. Student Counseling and Support**

<b>Activities Implemented</b>	<b>Brief Description *</b>
Orientation of new students	Electronically invitation via blackboard system to new students to attend the comprehensive program by the program faculty members. ( <a href="#">Annex 4-5-1</a> ) Guidance and orientation programs for new student and ( <a href="#">Annex 4-5-3</a> ) Report of new student's orientation day.)
Distribution of students to advisors	All the B.Sc. Physics program students are distributed to faculty members ( <a href="#">Annex 4-0-7-11</a> ) (Report from the Deanship of Admission and Registration on the distribution of program students to academic advisors).
Academic advising hours	All faculty members announced the academic advising hours in blackboard / at the office door. <a href="#">Annex APR E1</a> (Instructors Time Tables including academic advising hours)
Academic advising	Most of advisers done on individual or group academic advising to their students during this academic year 2021-2022. ( <a href="#">Annex APR E2</a> Samples of academic advisory files for the program students).
Follow up of weak students	The academic advisers follow up the weak students to rise their grades. ( <a href="#">Annex 4.0.8.1</a> ) and <a href="#">Annex APR E2</a>
Workshop for staff	Academic Advising Unit conduct a workshop to improve the academic advisor ( <a href="#">Annex 4-0-7-13</a> )
Workshops for graduated students & Scientific Day	The College of Science organizes annually the Scientific Day and workshops for graduated students where the faculty members introduce many specialized topics important to Physics Science students as indicated in ( <a href="#">Annex 4.0.12.8</a> ).
Professional day	In each academic year, prior to the commencement of the practical examinations, the college participates in the professional day. On the professional day, several workshops are held to teach students how to write a C.V., how to conduct interviews and how to choose the right job. On the professional day, the university invites a group of companies, where they are presented with graduation projects for senior students and graduates ( <a href="#">Annex 4.0.12.14</a> )

### Comment on Student Counseling and Support\*\*

- Most of the activities of the academic advising were done in both sections periodically to support the students of the Physics program during this academic year 2020-2021.
- A workshop was held for the academic mentors to explain the importance of academic counseling /its objectives and open a file for each student.
- [Female students](#) participate in academic advising demonstrations through video broadcasts or in attendance at the college theatre.

\* including action time, number of participants, results and any other statistics.

\*\* including performance evaluation on these activities

## 2. Professional Development Activities for Faculty and Other Staff

Activities Implemented	Brief Description	Action time	number of participants	results and any other statistics
The reality and future of the transition towards renewable energy in the agricultural sector in the Al-Jouf region	The future of agriculture based on renewable energy in the Al-Jouf region	21/04/2022	100	ND
Fulfill the course requirements of the Blackboard	workshop to train the faculty members to fulfill the course requirements of the Blackboard	12/06/2022	40	ND
Preparing graduates of the Physics program for the exit exam	A workshop for students in the final years to train them on how to perform the exit-exam for the program	11/05/2022	20	ND
The importance of using energy as an alternative source to cover electricity in mosques in the Al-Jouf region	The use of renewable energy as an alternative to energy in the Al-Jouf region	08/03/2022	120	ND

### Comment on Professional Development Activities for Faculty and Other Staff \*\*

- There was a very good attendance rate for most of the sessions.
- The program emphasizes on the continuous development of the faculty members working in the program. The annual assessment of the faculty members in the program includes some weight on the professional development and on organizing and participating in scientific conferences.
- The performance of faculty members and staff in carrying out teaching and administrative duties has improved significantly.

Professional Development Activities for Faculty and Other Staff can be found in

[Report Training plan for faculty members.](#)

[Report Training plan for students.](#)

[Report Training plan for technicians.](#)

\* including action time, number of participants, results and any other statistics.

\*\* including performance evaluation on these activities



### 3. Research and Innovation

Activities Implemented	Brief Description *
Publications	<ul style="list-style-type: none"> <li>▪ Physics Program members published 133 articles During the year 2021, all are cited in the data base WOS or SCOPUS.</li> <li>▪ Classification of numbers publications according to quartile of journal Q1=38, Q2=56, Q3=33, and Q4=6.</li> <li>▪ The number of members who published research is 16 members in the <a href="#">male section</a>, and 8 members in the <a href="#">female section</a>.</li> <li>▪ The ratio of the number of Program member who published at least one article in the male and female section, to the total number is 20/20 =100% for <a href="#">male section</a>, and 8/9= 88% for female section.</li> <li>▪ Percentage of publications of faculty members ( article/ member) for male( 8:1) while for female is ( 5:1) by average 6.5:1.</li> </ul>
Group Research	The Physics Program members got 3 group research funded deanship of scientific Research the total budget 15000 SAR. There is no group research in the <a href="#">female section</a> .
Reviewers and editors in scientific journals	There are 14 reviewers and editors in 43 scientific journals this number equal 48% from the totalof faculty members.
Members inscientific committees	There are 5 members of the Scientific Committee in the <a href="#">male section</a> and 4 members in the <a href="#">female section</a> .
Proven track record	There are 12 member have proven track record, 10 in <a href="#">male section</a> and 2 in <a href="#">female section</a> .
Funding project	The number of research projects that were funded reached 53 (47 in the <a href="#">male section (676800SAR) by ratio (88.7%)</a> and 6 in the <a href="#">female section (86400 SAR) by ratio by(11.3%)</a> total budget 763200 SAR.
<b>Comment on Research and Innovation**</b>	
<p>1-There is an increasing of the number of the published articles in this academic year 1443 by 10% comparing to the last year 133 articles.</p> <p>2- There is a huge increasing of the Physics Program members; they got 9 Groups Research funded deanship of scientific Research, while the last year there was only two.</p> <p>➤ <a href="#">Report on the research activities of the program</a> (2021-2022) including performance evaluation on these activities.</p> <p>3-The publication rate was 6.5 paper per faculty member (i.e. 7.5 paper per faculty member in the <a href="#">male section</a> and 5 paper per faculty member in the <a href="#">female section</a>) (<a href="#">Annex APR.E3</a>, KPIs 14, 15, 16 and KPI-AP-01-02).</p> <p>❖ Physics Program hope to increase the rate of scientific publishing by encouraging the staff members in the <a href="#">female section</a> to joint research with the staff members in the <a href="#">male section</a> or from the college of Science.</p> <p>❖ <a href="#">Scientific research plan and report</a></p>	

\* including action time, number of participants, results and any other statistics.

\*\* including performance evaluation on these activities

### 4. Community Partnership

Activities Implemented	Brief Description *
A training explaining the rights and obligations for University students.	Clarification the rights and obligations for University students
Scientific lecture entitled: the improve physical properties of Dy <sub>2</sub> O <sub>3</sub> rare earth oxide bye a	Demonstrating the improve physical properties of Dy <sub>2</sub> O <sub>3</sub> rare earth oxide bye a scientific workshop

scientific workshop.	
Scientific lecture entitled: the success secrets to the students of the department	Explaining the success secrets to the students of the department
Scientific lecture entitled: the use of the LaTeX program in scientific writing	Explaining the use of the LaTeX program in scientific writing
The seventh anniversary of allegiance.	Celebrating the seventh anniversary of allegiance
Scientific lecture entitled: high performance of MOS capacitors based on high dielectric oxide by an scientific lecture.	Clarifying the high performance of MOS capacitors based on high dielectric oxide by an scientific lecture.
Scientific lecture entitled: Program accreditation requirements (Self-study for the program).	Demonstrating the Program accreditation requirements (Self-study for the program)
Scientific lecture entitled: plasma technology and using it in Surface treatment of materials	Clarifying the plasma technology and using it in Surface treatment of materials
Training lecture entitled: Describing the Learning Outcomes Assessment.	Describing the Learning Outcomes Assessment by a training lecture
Workshop entitled: (applications of Advanced martial).	Presenting workshop entitled with (applications of Advanced martial) producing examples of advanced research in the department
Workshop entitled: The reality and the future of the transition towards renewable energy in the agricultural sector in Jouf region.	The reality and the future of the transition towards renewable energy in the agricultural sector in Jouf region
Workshop entitled: source to feed electricity in mosques in Jouf region.	The importance of using renewable energy as an alternative source to feed electricity in mosques in Jouf region
A training explaining the rights and obligations for University students.	Clarification the rights and obligations for University students
National Olives Festival	Every year, the province of Al-Jouf, holds two national festivals for olives and dates as famous products of the province. Each festival is held for 3-5 days. The Jouf University participates in these two festivals by holding an exhibit for the public. The Department of Physics participates in the university's exhibit. Such festivals are great opportunity for interaction with the community and educating the public about Physics Science aspects that touches their lives such as the utilization of solar energy and wind energy as renewable energy sources, air conditioning, etc.
National Dates Festival	
<b>Comment on Community Partnership**</b>	
<a href="#">Several training programs and workshops serving the community have been implemented. Community service Report B. Sc. Physics Program 2021-2022.</a>	

\* including action time, number of participants, results and any other statistics.

\*\* including performance evaluation on these activities

## 5. Analysis of Program Activities

(including strengths, Areas for Improvement:, and priorities for improvement)

**Strengths :**

- Jouf University support Physics faculty members through research grant to publish a high research publication.
- Several workshops and training courses have been directed to undergraduate and postgraduate students
- Three conducting seminars or weekly training workshops for 2 seminars or a workshop every week with the participation of both parts (male / female branches)

**Areas for Improvement:**At the level of the program

- Increasing the workshops and training courses for students to cover most of the topics related to the program in life and society.
- Improve students' research skills.
- Contribute to community service activities extensively.

**Female section**

- Increase the rate of scientific publishing by encouraging joint research with the male section or from the college of Science.

**Priorities for Improvement:**At the level of the program

- Improve students' research skills
- Contribute to community service activities extensively.

For Female section

- Increase the rate of scientific publishing by encouraging joint research with the male section or from the college of Science.

**F. Program Evaluation****1. Evaluation of Courses**

Course Code	Course Title	Student Evaluation ( Yes-No)	Other Evaluations (specify)	Developmental Recommendations
PHS 101	General Physics I	Yes	Employers survey report <a href="#">Annex S Employers (PLOs)</a>  <a href="#">Teaching staff Survey on Evaluating the Physics Program</a>	The course instructor should encourage students to fill out the questionnaires accurately after they know that their opinion will be taken into consideration and will have a role in developing the teaching of the course.
PHS202	General Physics II	Yes		
PHS423	Quantum Mechanics (2)	Yes		
PHS341	Modern Physics	Yes		
PHS342	Modern Physics Lab	Yes		
PHS 321	Thermal and statistical Physics	Yes		
PHS 472	Radiation Physics	Yes		
PHS 304	Mathematical Physics (2)	Yes		
PHS 467	Introduction to Nanoscience and Nanotechnology	Yes		
PHS 203	Mathematical Physics (1)	Yes		
PHS 101	General physics (1)	Yes		
PHS 334	Electronics Lab	Yes		

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
PHS 333	Electronics	Yes	Students Survey on Evaluating the Physics Program <a href="#">Annex SEP(M)</a> (Male students) and <a href="#">Annex SEP(F)</a>	
PHS 365	Semiconductors	Yes		
PHS 473	Nuclear Lab.	Yes		
PHS 466	Material science	Yes		
PHS 463	Solid state physics Lab.	Yes		
PHS 462	Solid state 2	Yes		
PHS 499	Research Project	Yes		
PHS 211	Classical Mechanics I	Yes		
PHS 351	Optics	Yes		
PHS 213	Waves and Vibrations	Yes		
PHS498	Field Training	Yes		
PHS 471	Nuclear Physics	Yes		
PHS422	Quantum Mechanics 1	Yes		
PHS 231	Electromagnetism	Yes		
PHS 361	Solid State Physics 1	Yes		

## 2. Students Evaluation of Program Quality

Program evaluation survey ( <b>Male and Female section</b> ) Evaluation Date : Spring 2022	Number of Participants: <b>17 M</b> and <b>70 F</b>
Students Feedback	Program Response
<p><b>Strengths:</b> <b>For Male and Female section</b></p> <ul style="list-style-type: none"> <li>• High response rate for <b>male</b> (82.3%) as well as for <b>female</b> (91.4%) students</li> <li>• Good overall satisfaction for both <b>male</b> (4.35/5) and <b>female</b> <ul style="list-style-type: none"> <li>▪ The teaching staffs were available for guidance and advice when student needed to talk to them.</li> <li>▪ Computer labs were adequate for student's needs.</li> <li>▪ There are facilities suitable for performing religious rites.</li> <li>▪ An ability to identify, formulates, and solves complex physics problems by applying principles of mathematics.</li> <li>▪ An ability to communicate effectively with a range of audiences.</li> <li>▪ An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.</li> <li>▪ Generally, students satisfied with the quality of their educational experience at the university.</li> </ul> </li> </ul>	<p>The evaluation results were studied and analyzed in order to take necessary measures towards these results.</p>
<p><b>Areas for Improvement:</b> <b>For Male and Female students</b></p> <ul style="list-style-type: none"> <li>• Improve the skills of practical experimentation</li> </ul>	<p>Based on the study and analysis of the evaluation results, some points of improvement have been identified.</p>

<p>and dynamic and creative consensus.</p> <ul style="list-style-type: none"> <li>• Motivate student' participation in extracurricular activities to develop their abilities and skill.</li> <li>• Engage students in more research activities, especially in the advanced level courses.</li> <li>• Field training programs must be effective in developing student's skills.</li> </ul>	
<p><b>Suggestions for improvement:</b>  <b><u>For Male and Female students</u></b></p> <ul style="list-style-type: none"> <li>• Improve the English language of the students</li> <li>• Motivate student' participation in extracurricular activities to develop their abilities and skill.</li> <li>• Engage students in more research activities, especially in the advanced level courses.</li> <li>• Field training programs must updated and with institutions that have high level trainings.</li> </ul>	<p>Based on the study and analysis of the evaluation results, and on the suggested improvement points, a mechanism for implementing improvement processes was determined</p>

\* Attach report on the students evaluation of program quality- [Annex SEP\(M\)](#) (Male students) and [Annex SEP\(F\)](#)

### 3. Other Evaluations

(e.g. Evaluations by independent reviewer, program advisory committee, and stakeholders (e.g., faculty members, alumni, and employers)

<b>Evaluation method :</b> Alumni survey ( <b>Male and Female section</b> )	<b>Date: Spring 2022</b>	<b>Number of Participants : 6 M and 35 F</b>
<b>Summary of Evaluator Review</b>		<b>Program Response</b>
<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Number of <b>male</b> alumni that find a job after their graduation is 6 with a percentage of 46.2 %.</li> <li>• Number of <b>female</b> alumni that find a job after their graduation is 12 with a percentage of 37.5%.</li> <li>• Good overall satisfaction for both <b>male</b> (4.42/5) and <b>female</b> (4.37/5) students.</li> </ul>		<p>The evaluation results were studied and analyzed in order to take necessary measures towards these results.</p>
<p><b>Points for Improvements:</b>  <b><u>For Female section</u></b>  Satisfaction level for PLO3- K3 showed a high alumni's satisfaction (average of 3.43 out of 5). However, this item can be improved. However PLO-K3 must be improved in the female section  Encouraging female students to come to the central laboratory in the main building, and the participation of male students in experimental work, and encouraging them to collective effort.  <b><u>For male students</u></b>  Satisfaction level for PLO4- K4 and PLO8- V3 showed an average alumni's satisfaction (average of 3.33 out of 5).  <b><u>At the level of the program</u></b>  More communication with alumni's and stockholders to know what they need.</p>		<p>Based on the study and analysis of the evaluation results, some points of improvement have been identified.</p>

<p><b>Suggestions for improvement</b></p> <p><b>For Female section</b></p> <ul style="list-style-type: none"> <li>• PLO4- K3 :</li> </ul> <p>Improve the student ability to critique theories, concepts and applications of modern physics.</p> <p><b>For Male section</b></p> <ul style="list-style-type: none"> <li>• PLO4- K4 :</li> </ul> <p>Improve the student ability to Outline processes, materials, techniques, practices, conventions and/or terminology in physics field in various complex contexts.</p> <ul style="list-style-type: none"> <li>• PLO8- V1 :</li> </ul> <p>Improve the student ability to Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts.</p> <p><b>At the level of the program</b></p> <p>More communication with alumni's and stockholders to know what they need.</p>	<p>Based on the study and analysis of the evaluation results, and on the suggested improvement points, a mechanism for implementing improvement processes was determined.</p>
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[Annex S\(M\) Alumni \(PLOs\)](#) - [Annex S\(F\) Alumni \(PLOs\)](#)

<p><b>Evaluation method :</b> Employers survey (<b>Male and Female section</b>)</p>	<p><b>Date: Spring 2022</b></p>	<p><b>Number of Participants : 16 M and 2 F</b></p>
Summary of Evaluator Review		Program Response
<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Good overall satisfaction for both <b>male</b> (3.75/5) and <b>female</b> (5/5) students.</li> </ul>	<p>The evaluation results were studied and analyzed in order to take necessary measures towards these results.</p>	
<p><b>Points for Improvements:</b></p> <p><b>At the level of the program</b></p> <p>More communication with employers to face job market needs.</p> <p><b>For Male section</b></p> <p>Improve the student soft skills.</p> <p>Paying more attention to the field training course.</p>	<p>Based on the study and analysis of the evaluation results, some points of improvement have been identified.</p>	
<p><b>Suggestions for improvement</b></p> <p><b>At the level of the program</b></p> <ul style="list-style-type: none"> <li>▪ More communication with employers to face job market needs.</li> </ul> <p><b>For Male section</b></p> <ul style="list-style-type: none"> <li>▪ Improve the student soft skills.</li> <li>▪ Paying more attention to the field training course.</li> </ul>	<p>Based on the study and analysis of the evaluation results, and on the suggested improvement points, a mechanism for implementing improvement processes was determined.</p>	

\* Attach independent reviewer's report and stakeholders' survey reports ( if any)

Employers survey report [Annex S Employers \(PLOs\)](#)

Examination paper evaluation report [Annex APR. II.](#)

Internal auditing report of program specification, program reports, course specifications, course reports, [Annex APR I2.](#)

#### 4. Key Performance Indicators (KPIs)

List the results of the program key performance indicators (including the key performance indicators required by the National Center for Academic Accreditation and evaluation)

No	KPI	Target Benchmark	Actual Value			Internal Benchmark	Analysis	New Target Benchmark
			M	F	Total			
KPI-P-01	Percentage of achieved indicators of the program operational plan objectives.	80 %	75.8 %		75.8 %	62.5 %	The Percentage of achieved indicators of the program operational plan objectives is based on the percentage of performance indicators of the operational plan. The actual benchmark of The Percentage of achieved indicators of the program operational plan objectives through the year 2021/2022 reached to (75%) which exceeds the internal benchmark (70%) but did not achieve the targeted benchmark (80%). It is noted that the actual benchmark (75%) in the program lower than the external benchmark (87.3%) of Prince Sattam Bin Abdulaziz (PSAU).	80 %
KPI-P-02	Students' Evaluation of quality of learning experience in the program	4.5	4.17	4.45	4.5	4.3	the final year student's evaluation of the quality of their learning experiences in the program, KPI-P-02 is calculated from the questionnaire. The actual performance indicator for the female section (4.45) is greater than that of the male section (4.17). <b>The targeted benchmark was achieved for female students and at the level of the program.</b> The actual Benchmark of the program is greater than both values of the External Benchmark, PSAU (4.2) and Internal Benchmark (4.3) and target benchmark (4.4) was achieved	4.5
KPI-P-03	Students' evaluation of the quality of the courses.	4.5	4.2	4.43	4.40	4.33	The actual performance indicator of the student's evaluation of the quality of the course for female students (4.43) is greater than that of the male students (4.2). The actual value of the male students did not achieve the targeted benchmark (4.4). The actual Benchmark of the program is greater than both values of the External Benchmark of PSAU university (4.21) and Internal Benchmark (4.34) and <b>the target benchmark (4.4) was achieved for female students and program.</b>	4.5
KPI-P-04	Completion rate.	80 %	17.4 %	30 %	25.4%	23 %	The Actual value of student's completion rate in the program indicates the percentage of students who entered the undergraduate program and completed the program in minimum time. It is noted from the data obtained of completion rate for the female section (30%) completely higher than the corresponding values in the student sector (17%). The total average value has achieved the target for this year (75%) and higher than the internal benchmark (23%) but is still less than the external benchmark (35.3%) of Prince Sattam Bin Abdulaziz university (PSAU). The male section is slightly less than the target and internal benchmark.	80 %
KPI-P-05	First-year students retention rate	80 %	60 %	88 %	83%	74.1 %	The percentage of students who enter the program and successfully complete the first year has been increased in 2021/2022 compared to the last academic year2020/2021. However the actual benchmark (83%) has been increased for the program but the actual value of male section (60%) is still lower than the value of female section (88%) and of the value program (83%). However, <b>the targeted level has been achieved</b> for female and program; but it is still less than the external benchmark of Prince Sattam Bin Abdulaziz (PSAU)(97.7%).	84%
KPI-P-06	Students' performance in the professional and/or national examinations.	25%	0%	0%	0%	8%	The data and analysis of KPI-P-06: The Students' performance in the professional and/or national examinations for the physics program is not calculated as we did not receive the data for the indicator from the competent authority.	25%
KPI-P-07	Graduates' employability and enrolment in postgraduate	50%	46.2 %	37.5 %	40%	27.3%	the actual performance indicator (40 %) of the percentage of the employability of graduates is higher than the internal benchmark value (25%) but the target (50%) did not achieved. however the actual benchmark is increased through the last year but the actual value for <b>male section</b>	50%

	programs.						(46.2%) is higher than the value of female section (37.5%). Based on the analysis of the indicator's development, the target performance indicator value will be fixed at (50 %).	
		20%	33.3 %	0%	6.1%	16.65 %	the actual performance indicator (6.1%) of the percentage value of the Enrollment in postgraduate program has been sharply decreased in the last year and the target (20%) was not achieved for both male and female also the actual value of female section decreased to 0% which is much lower than the value in male section (33.33%). Based on the analysis of the indicator's development, the target performance indicator value will be fixed. The value of the new target indicator is 25 %.	25 %
KPI-P - 08	Average number of students in the class.	25	7.64	13.81	10.91	14	The results indicate that the actual performance indicator of the average number of students in the class in the physics program has decreased to 10.91; compared to the target performance which was equal to 15 the target performance was not achieved. Based on the analysis of the indicator's development, the target performance indicator value will be fixed. The value of the new target indicator is (25)	25
KPI-P - 09	Employers' evaluation of the program graduates proficiency.	4.2	4.1	4.3	4.28	4	the actual performance indicator of the employers' evaluation of the physics program graduates proficiency in job skills reached a high rated value 4.28 which is slightly greater than the both values of the internal benchmark (4) and external for Prince Sattam Bin Abdulaziz university y, 3.7 and greater than the target value (4.2). The actual performance indicator of the employers' evaluation of female graduate's proficiency in job skills exceeds the value of male graduates and the target was achieved for female and at all the level of program. Based on the analysis of the indicator's development, the target performance indicator value will be increased to(4.5).	4.5
KPI-P - 10	Students' satisfaction with the offered services.	4	4.2	4.33	4.25	3.88	the actual performance indicator of the students' satisfaction with the offered services of the physics program reached a high rated value (4.25) which is higher than the values of the internal benchmark (4), external benchmark Prince Sattam Bin Abdulaziz university (3.55) and the target (4.2). it is clear that the actual performance indicator of the students' satisfaction with the offered services for female section (4.33) is slightly higher than the value of male section (4.2) but the both values of male and female achieved the target benchmark. Based on the analysis of the indicator's development, the target performance indicator value will be increased to (4.5).	4.5
KPI-P - 11	Ratio of students to teaching staff.	20:1	1.5:1	11:1	5:1	7 :1	Actual value of the Ratio of students to teaching staff of the program is calculated by dividing the all number students in the program by the number of full-time teaching staff at the department during the academic year 2021/2022. It is noted that the actual performance of the ratio of students in male section (1.5:1) is very low compared to female section ratio (11:1). the external benchmark of Prince Sattam Bin Abdulaziz university (18.8:1) is very large compared to the actual benchmark of the program(5:1) and the male value (2:1) but it is closely to female ratio(14:1). There is no change in the actual value (5:1) comparing to the value of the last year (5:1), so that the target performance was fixed at (20:1).	20:1
KPI-P - 12	Percentage of teaching staff distribution.	M: 60% F:40 % Assist. P:48 % Assoc. P:40 % Prof.: 12 %	M:74.2% F:25.8% Assist. P: 67.7% Assoc. P: 29.1% Prof.: 3.2%	M:70% F:30 % Assist. P: 70 % Assoc. P: 26.7 % Prof.: 3.3 %			The distribution of the B.Sc. Physics program at JU by rank, we note that there are currently 3.2 % Full Professors in the department, while the distribution of Associate and Assistant Professors is 29.1% and 67.7% respectively. Keeping in view the actual, and target benchmarks, the quality committee has decided to retain the target benchmark. i.e. 12% Full Professor, 40% Associate Professor, and 48% Assistant Professor.	M:60% F: 40% Assist. P: 48% Assoc. P: 40% Prof.: 12%
KPI-P - 13	Proportion of teaching staff	6%	0%	11.1 %	3.2%	11.5 %	The results indicate that the actual performance indicator of the proportion of teaching staff	2 %



	leaving the program.						leaving the physics program has been decreased and reached 3.2%, 0% for male section and 11.1 % in female section. Although the target performance (0%) has not achieved, the actual performance (3.2%) has been decreased in the last year. The external benchmark (3.8%) for Prince Sattam Bin Abdulaziz university is approximately equal to the actual value(3.2%). The value of the new target indicator is increased to (2 %).	
<b>KPI-P - 14</b>	Percentage of publications of faculty members.	<b>100 %</b>	<b>100 %</b>	<b>87.5 %</b>	<b>96.77 %</b>	<b>90 %</b>	The actual benchmark (96.77%) was calculated for the academic year 2021-2022. the Percentage of publications of faculty members for male section is 100%, while for the female section is 87.5% by average 96.77%. The average is near to the internal benchmark which is (90%) and external benchmark (92.3%). The results indicate that the actual performance of the scientific publication percentage indicator of the faculty members in the program is increasing from year to year and exceeds the internal value. Based on the analysis of the indicator's development, the target performance indicator value will be fixed. The new value is 100%.	<b>100 %</b>
<b>KPI-P - 15</b>	Rate of published research per faculty member.	<b>3:1</b>	<b>5.17 :1</b>	<b>2:1</b>	<b>4.35:1</b>	<b>2.9:1</b>	the Rate of published research per faculty member for male section is 5.175:1, while for the female section is 2:1 by average 4.35:1. From The obtained result it is clear that the actual performance indicator of the rate of published research per faculty member has been increased to (4.35), and exceeds the value of the internal (2.9:1) benchmark. target performance (3:1) has been achieved. Based on the analysis of the indicator's development, the target performance indicator value will be increased. The new value is 5:1.	<b>5:1</b>
<b>KPI-P - 16</b>	Citations rate in refereed journals per faculty member.	<b>40:1</b>	<b>85:1</b>	<b>34.7 5:1</b>	<b>63.5:1</b>	<b>38.8:1</b>	the Citations rate in refereed journals per faculty member for male section is 85:1; while for the female section is 34.75:1 by average 63.5:1. From The Results it is clear that the actual performance indicator value (63.5) of citations in refereed journals has been slightly increased for both female and male branches however the number of citations for female branch is still less than male branch. The target performance (40 :1) has been achieved, based on the analysis of the indicator's development; the target performance indicator value will be increased. The new value is 70:1.	<b>70:1</b>
<b>KPI-P - 17</b>	Satisfaction of beneficiaries with the learning resources.	<b>4.2</b>	<b>4.2</b>	<b>3.85</b>	<b>4.2</b>	<b>4.04</b>	the actual performance indicator of the students' Satisfaction of beneficiaries with the learning resources of the physics program reached a high rated value 4.2 which is slightly higher than the values of the internal benchmark (4.04) and target values (4.2) was achieved. Satisfaction of beneficiaries for female students (3.85) with the learning resources is lower than that of male section (4.2). Comparing the values of external and actual benchmark it is noted that the actual benchmark (4.2) is higher than the external benchmark (3.7) of Prince Sattam Bin Abdulaziz university. Based on the analysis of the indicator's development, the target performance indicator value will be increased to (4.5).	<b>4.5</b>
<b>KPI-AP-1</b>	Number of research groups in the program	<b>1</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	the Number of research groups in the program is 3. It is clear that the total Number of research groups in the program (3) is higher than both values of internal (2) and the targeted benchmark (1).	<b>1</b>
<b>KPI-AP-2</b>	The number of supported research projects obtained by the program per year	<b>20</b>	<b>46</b>	<b>6</b>	<b>52</b>	<b>18</b>	the actual performance indicator of the number of research projects received by faculty members in the program has been increased and reached to 46 for male section and 6 projects for female section and the total number is 52 projects. the targeted value doesn't achieved in female section but achieved for male section and. Based on the analysis of the indicator's development, the target performance indicator value will be increased. The value of the new target indicator is (55%).	<b>55</b>
<b>KPI-AP-3</b>	Percentage of students	<b>60 %</b>	<b>83 %</b>	<b>84 %</b>	<b>83.5%</b>	<b>52.6 %</b>	The actual performance indicator of the percentage of students participating in	<b>85%</b>

	participating in extracurricular activities						extracurricular activities of the physics program reached a high rated value 83.5% which is higher than the value of the internal benchmark (70%) and the target (75%) of the indicator is achieved in both section and at the level of the program. Based on the analysis of the indicator's development, the target performance indicator value will be increased. The value of the new target indicator is (85%).	
<b>KPI-AP-4</b>	Employers' satisfaction with the program's target, vision and mission	4.2	4.35	4.35	4.35	4.71	The results indicate that the actual performance indicator of Employers' satisfaction with the program's target, vision and mission in the program has been decreased and reached 4.35 in the last year, but the target has been achieved in both male and female sections and at the level of the program. Based on the analysis of the indicator's development, the target performance indicator value will be fixed. The value of the new target indicator is (4.2).	4.2
<b>KPI-AP-5</b>	Percentage of student graduation projects related to the surrounding community	45%	57.1 %	50 %	53.3%	40 %	The results indicate that the actual performance indicator of Percentage of student graduation projects related to the surrounding community in the program has been increased and reached 53.3 % in the last year which exceeds the target benchmark 45% and indicator achieved for male and female section. Based on the analysis of the indicator's development, the target performance indicator value will be increased to (60%).	60 %

#### Comments on the Program KPIs and Benchmarks results :

Twenty two KPIs have been measured:

##### [For male section](#)

14 KPIs have achieved the target. The rest of KPIs are being made to achieve the target in the next years.

##### [For Female section](#)

8 KPIs have achieved the target. The rest of KPIs are being made to achieve the target in the next years.

##### [For the program](#)

11 KPIs have achieved the target. The rest of KPIs are being made to achieve the target in the next years.

➤ [A complete report of KPI analysis of Physics program](#)

## 5. Analysis of Program Evaluation

(including strengths, Areas for Improvement:, and priorities for improvement)

### Strengths :

- The rate of scientific publication and citation is high among members of the Physics Program.
- Labs are equipped with state-of-the-art tools and devices.
- The program accepts registration applications for Saudi and Non-Saudi students.
- The registration process is fully automated through the Deanship of Admission and Registration portal.
- The student/staff ratio and average class size are almost constant and comparable with
- External benchmarks of other similar programs.
- More Saudi staff will return with Ph.D., granted from ranked universities abroad.

### Areas for Improvement:

#### [For Female section](#)

- Raising the rate of scientific publication, citation, and participation in supported research projects.
- Recruitment of female faculty members.

#### [At the level of the program](#)

- Completion rate of the program should be enhanced. the results show a decrease in the

number of students attends this program and finish it in minimum time comparable to the past academic year and the values is small which mean that this indicator need more improvements to increase its values.

- First-year students retention rate is needed to be improved. First-year students are new to the university's study system, so they must be made aware of the study system and the examination regulations used in the program.
  - Improvement of the involvement factors that leads to a decrease in the completion rate: (a) student-faculty interaction, (b) the role of mentorship, and (c) participation in student organizations as well as Motivation for extracurricular activities.
- Students' performance in the professional and/or national examinations, where the program should have a clear plan to improve the student's performance.
- Graduates' employability and enrolment in postgraduate programs.
- Active participation in community service from both parts.
- Hiring more associate professors and professors in the Physics department.
  - Improve the student soft skills.
  - Improve the English language of the students
  - Motivate student' participation in extracurricular activities to develop their abilities and skill.
  - Engage students in more research activities, especially in the advanced level courses.
  - Field training programs must updated and with institutions that have high level trainings.

**Priorities for Improvement:**

**At the level of the program**

- Improve student completion rate through the improvement of the involvement factors that leads to a decrease in the completion rate: (a) student-faculty interaction, (b) the role of mentorship, and (c) participation in student organizations as well as Motivation for extracurricular activities.
- Improvement of the Graduates' employability and enrolment in postgraduate programs.
- Improve the student soft skills.
- Motivate student' participation in extracurricular activities to develop their abilities and skill.
- Engage students in more research activities, especially in the advanced level courses.
- Field training programs must update and with institutions that have high level trainings.

**For female section**

- Raising the rate of scientific publication, citation, and participation in supported research projects.

**G. Difficulties and Challenges Faced Program Management**

Difficulties and Challenges	Implications on the Program	Actions Taken
<u>At the level of the program</u> Conducting an independent external opinion on quality of the program.	To improves the quality of the Program.	An external reviewer has been selected and contacted to perform the review.

\*Internal and external difficulties and challenges

**H. Program Improvement Plan**

No.	Priorities for Improvement	Actions	Action Responsibility	Date		Achievement Indicators	Target Benchmark
				Start	End		

1	Improve student completion rate.	<p><b>For Male and Female students</b></p> <ul style="list-style-type: none"> <li>▪ Improve: (a) student-faculty interaction, (b) the role of mentorship, (c) participation in student clubs and (d) the participation in the extracurricular activities.</li> <li>▪ Monitoring the implementation the mechanism and procedures of the student retention policy and increased completion rates.</li> </ul>	Students affairs and alumni committee/Academic advising committee/course coordinator	Sep 2022	May 2023	KPI-P-04	75%
2	Improving the passing rates in the final years	<p><b>For Male Students</b></p> <ul style="list-style-type: none"> <li>▪ Improve the student soft skills (i.e., team work, self-learning, problem solving, critical thinking...).</li> </ul>	Course coordinator/course instructor	Sep 2022	May 2023	KPI-P-04	75%
3	Improve the student ability to explore fundamental concepts, facts and principles, and applications of physics.	<p><b>AT the level of the program</b></p> <p>Use a variety of summative and formative assessments to construct a comprehensive and nuanced picture of each student.</p>	Course coordinator/course instructor	Sep 2022	May 2023	KPI of PLO K1	75%
4	Improve the student ability to demonstrate mathematical theories and commonly used means in Physics.	<p><b>AT the level of the program</b></p> <ul style="list-style-type: none"> <li>▪ Apply physical information in a variety of scenarios and make connections between new and prior knowledge.</li> </ul>	Course coordinator/course instructor	Sep 2022	May 2023	KPI of PLO K2	75%
5	Improve the student ability to Critique theories, concepts and applications of modern physics.	<p><b>For Female section</b></p> <p>Apply appropriate active learning strategies.</p>	Course coordinator/course instructor	Sep 2022	May 2023	KPI of PLO K3	80%

6	Improve the student ability to Outline processes, materials, techniques, practices, conventions and/or terminology in physics field in various complex contexts	<b>For Male section</b> Apply physical information in a variety of scenarios and make connections between new and prior knowledge.	Course coordinat or/course instructor	Sep 2022	May 2023	KPI of PLO K4	80%
7	Improve the student ability to Sustain effectively Islamic values, ethical and professional responsibilities and the impact of scientific solutions in global, economic, environmental, and societal contexts	<b>For Male section</b> Informing students of the low percentage of plagiarism for the Program and urging students to adhere to the accepted levels of plagiarism while preparing their reports, research, and presentations.	Course coordinat or/course instructor	Sep 2022	May 2023	KPI of PLO V1	80%
8	Improve the student ability to Solve broadly defined scientific problems by applying knowledge of mathematics and science to areas relevant to physics	<u>AT the level of the program</u> ▪ Increase attention to the soft skills (e.g. Critical Thinking, Problem-Solving Attitude) aspects while teaching the courses. Use a variety of summative and formative assessments to construct a comprehensive and nuanced picture of each student	Course coordinat or/course instructor	Sep 2022	May 2023	KPI of PLO S1	80%
9	Improve the student ability to Formulate and/or design a system, process, procedure or program to meet desired needs independently	<u>AT the level of the program</u> ▪ Increase attention to the soft skills (e.g. Critical Thinking, Problem-Solving Attitude) aspects while teaching the courses. ▪ Encourage hands-on experimentation and authentic inquiry	Course coordinat or/course instructor	Sep 2022	May 2023	KPI of PLO S3	80%

10	Improve the student ability to Collaborate effectively within teams via establishing goals, planning tasks, meeting deadlines, and analyzing risk and uncertainty	<u><a href="#">For Male section</a></u> Increase attention to the teamwork while teaching the courses Apply appropriate active learning strategies	Course coordinat or/course instructor	Sep 2022	May 2023	KPI of PLO V2	85%
11	Improve the student ability to Learn self-sufficiently and continuously to improve social and professional leadership value	<u><a href="#">For Male section</a></u> <ul style="list-style-type: none"> <li>▪ Increase attention to the soft skills</li> <li>▪ Increase the number of formative assessments</li> <li>▪ Focus on teaching strategies that center on the student and encourage active learning activities in the courses, which stimulates self-learning skills</li> </ul>	Course coordinat or/course instructor	Sep 2022	May 2023	KPI of PLO V3	81%
12	Improve the student soft skills.	<u><a href="#">For Male and Female section</a></u> <ul style="list-style-type: none"> <li>▪ Increase attention to the soft skills aspects while teaching the course</li> <li>▪ Increase the Mark weight of soft skills Assessment.</li> <li>▪ Increase the number of formal assessments.</li> </ul>	Course coordinat	Sep 2022	May 2023	KPI of PLOs	
13	Improve the English language of the students	<u><a href="#">At the level of the Program</a></u> <ul style="list-style-type: none"> <li>▪ Training students on physics terms in English to facilitate understanding.</li> <li>▪ Preparing workshops on the scientific English language for the students of the program</li> </ul>	Course instructor / Training and development committee	Sep 2022	May 2023	KPI of PLOs	
14	Decreasing the student's failure rate.	<u><a href="#">At the level of the Program</a></u> follow up on the failing students with the academic advisor must	Program coordinat or/ Academic advising committee	Sep 2022	May 2023	KPI-P-05	84%

			e				
15	Obtain courses with outstanding performance.	<p><a href="#">At the level of the Program</a></p> <ul style="list-style-type: none"> <li>▪ Emphasis on extra-curricular activities in courses in order to contribute to raising the completion rate.</li> <li>▪ Improve the student soft skills (i.e., team work, self-learning, problem solving, critical thinking...).</li> <li>▪ Continue giving feedback after each assignment or test to students so that they can improve their performance.</li> </ul>					
16	Improve students' research skills.	<p><a href="#">At the level of the Program</a></p> <p>Involve students in research activities, such as participating in scientific seminars within the college, scientific research...</p>	Course instructor/Scientific Research Committee	Sep 2022	May 2023	KPI-AP-5	50 %
						KPI-P-07	25%
17	Contribute to community service activities extensively.	<p><a href="#">At the level of the Program</a></p> <p>Implement the plan of the community service</p>	community service committee	Sep 2022	May 2023		
18	Raising the rate of scientific publication, citation, and participation in supported research projects	<p><a href="#">For female students</a></p> <p>Support joint interaction between male and female staff in the field of research.</p>	Scientific Research Committee	Sep 2022	May 2023	KPI- P – 14	100 %
						KPI- P – 15	7:1
						KPI- P - 16	70:1
19	Give the possibilities for female faculty members and male faculty members to pass from the rank of Assistant Professor to the rank of Associated Professor and	Encourage the staff to apply for funded project. Encourage the female and male staff to apply for joint projects	Program coordinator	Sep 2022	May 2023	KPI-AP-2	5

	Professor						
20	Improve the quality of field training activities	<a href="#">At the level of the Program</a> <ul style="list-style-type: none"> <li>▪ Increase contacts with companies to cover more areas.</li> <li>▪ Holding workshops for students to be more aware and familiar with all aspects of Training.</li> </ul>	Field training committee	Sep 2022	May 2023	KPI-P-04	80%
21	Informing stakeholders of the decisions taken as a result of the opinion polls they participated in.	<a href="#">At the level of the program</a> Increase the communication channels with the society	Community service committee	Dec 2022	May 2023	KPI- P- 02	4.6
						KPI- P- 03	4.5
						KPI- P- 09	4.2
						KPI-P -10	4.3
22	Improvement of the Graduates' employability and enrolment in postgraduate programs	<a href="#">At the level of the program</a> Increase the program partnership with the Labor market: searching for companies from the labor market to receive students for training or as organized field visits, which contributes to raising the rate of employment for students of the physics program	Committee of community service	Sep 2022	May 2023	KPI-P- 07 Graduates' employability	50%
23	Continue giving feedback after each assignment or test to students so that they can improve their performance.	<a href="#">At the level of the Program</a> Monitoring the implementation of the mechanisms and procedures at the program level for the feedback to students	Course instructor/course coordinator	Sep 2022	May 2023	KPI- P - 06	45%
24	Increase the Achieved indicators of the program operational plan objectives	<a href="#">At the level of the program</a> Follow up all aspects of operational plan	KPIs Committee	Sep 2022	May 2023	KPI-P-1	100%
25	Ensure that the	<a href="#">At the level of the</a>	Scientific	Sep	May	KPI-P-17	4.5



	students and technicians are fully understood regarding the safety and security in laboratories.	<a href="#">program</a> Workshops and meetings about the safety and security	research committee	2022	2023		
26	Improve the student skills in female section how to use the Digital library and the blackboard	<a href="#">In female section</a> Training courses about the blackboard and the Digital library	Training and development committee	Sep 2022	May 2023		
27	<u><i>At the level of the program</i></u> Increase the weaknesses of the students with the scientific research related the needs of the society	Workshops about the society needs	Community services committee	Sep 2022	May 2023	KPI-Ap-5	60%

### I. Report Approving Authority

<b>Council / Committee</b>	<b>PHYSICS DEPARTMENT COUNCIL</b>
<b>Reference No.</b>	<b>DEPARTMENT MINUTES NO. (11/1444)</b>
<b>Date</b>	<b>6/12/2022 CORRESPONDING TO (12/05/1444)</b>

### J. Attachments :

- A separate cohort analysis report for male and female sections and for each branch - [Annex APR. J1](#)
- A report on the program learning outcomes assessment results for male and female sections and for each branch (if any) - [Annex APR. J2a](#) and [Annex APR. J2b](#)
- A report on the students evaluation of program quality - [Annex SEP\(M\)](#) (Male students) and [Annex SEP\(F\)](#) (Female students).
- Independent reviewer's report and other survey reports (if any)- [Annex APR J3](#)
- Employers survey report [Annex S\\_Employers \(PLOs\)](#)