

Scientific Research Plan

Physics Program (2021/2022)

❖ Mission:

Preparing educationally qualified graduates and contributing to scientific research in the field of physics and its applications to serve and develop society

objectives of the program:

1. Providing educational outcomes compatible with academic accreditation standards.
2. Providing a distinguished academic environment in the field of physics.
3. Preparing scientifically qualified graduates in the field of physics and its applications to meet the needs of the labor market.
4. Providing consultations in the field of physics to serve the community.
- 5-Providing distinguished scientific and applied research in the field of physics

❖ Execute Objectives

Operational objectives	Activities and Procedures	Output
Developing the scientific research plan for the program	Application Scientific research plan for the program	Report of the scientific research plan for the program
Participation of faculty members in scientific activities	Providing scientific courses for faculty members in their fields of specialization	Providing scientific courses offered to faculty members
Participation of students' in scientific activities	Providing training courses for students in the field of research and scientific publishing	A report on the scientific courses offered to students

Scientific Research Plan

Executive objectives	Scientific Research Plan objectives	Activities and Procedures	Output	Responsible	Follow up	Period	Indicators
Developing a the scientific research plan for the program (program Operational Plan)	1. Establishing scientific databases within the program.	<p>Publish research according to research priorities, which are :</p> <p>1-Research Excellence in advanced materials</p> <p>2-Environmental studies</p> <p>-To improve water supply capacity, quality and reliability</p> <p>-Reducing of natural and artificial Radiation pollution</p> <p>3-Theoretical Studies, Modeling and Simulation research</p>	<p>• report of a database that includes an inventory of published research, Supported research projects, graduation projects and research group in the program.</p> <p>• The report of a database that includes Supported research projects and scientific research that includes environmental problems related to the Al-Jouf</p>	<ul style="list-style-type: none"> Scientific Research Committee Scientific Research Committee and Media Committee program 	<ul style="list-style-type: none"> Scientific Research Committee Scientific Research Committee and Media Committee program 	September 2021 to June 2022	<p>-KPI-14</p> <p>KPI-15</p> <p>KPI-18</p> <p>KPI-19</p> <p>KPI-P-22</p>

		- The link between the problems of the surrounding research environment and the quality of the research of the Program members.	region like olive research, water treatment ...etc				
Participation of students' in scientific activities (<u>program Operational Plan</u>)	2. Encourage faculty members to develop research and creative skills.	- Attending training courses and workshops for skills development in various deanships and centers at Jouf University -Holding seminars in the program to exchange scientific experiences and brainstorm ideas among the program's Program members.	Report on the number of training courses and workshops in various deanships and centers at Jouf University attended by faculty members in the program •Report on the number of seminars and workshops implemented in the program	<ul style="list-style-type: none"> • Scientific Research Committee • Scientific Research Committee 	<ul style="list-style-type: none"> • Scientific Research Committee • Scientific Research Committee 	September 2021 to June 2022	Ratio of faculty members who participated in scientific activities to the total number of faculty members in the program Percentage of faculty members attendance of seminars, workshops in the program
Participation program members in scientific	Qualifying the students to work in	Providing training courses for students in the field of research	A report on the scientific courses offered to students	<ul style="list-style-type: none"> • The scientific Activities and 	<ul style="list-style-type: none"> •The scientific Activities and Seminars committe 	September 2021 to June 2022	Percentage of students who participated in scientific activities

activities (<u>program</u> <u>Operational</u> <u>Plan</u>)	the research field	and scientific publishing		Seminars committe			
Developing academic and research work for the college's contribution to community service and development (<u>college of science</u> <u>stratigy plan</u> <u>& Scientific</u> <u>Research unit</u> <u>plan</u> <u>objective</u>)	Increased interest in research that affects the evolution of the surrounding environment	Publishing an articles relate to Aljouf society's priorities and needs.	A report on scintific articles relate to Aljouf society's priorities and needs.	<ul style="list-style-type: none"> Scientific Research Committee 	<ul style="list-style-type: none"> Scientific Research Committee 	September 2021 to june 2022	Number of scintific articles relate to Aljouf society's .priorities and needs

Total budget for the plan

No	Objective	Budget / in Saudi riyals
1	Providing distinguished scientific and applied research in the field of physics	2073600
	Total	2073600

Measuring indicators of Objectives

Performance Indicators	Target Benchmarks	Actual Benchmarks	male	female
KPI-P-14 :Percentage of publications of faculty members.	100%	96.77%	100%	87.5%
KPI-P-15 :Rate of published research per faculty member.	5:1	4.35:1	5.17:1	2:1
KPI-P-16 :Citations rate in refereed journals per faculty member.	65:1	63.5:1	85:1	34.75:1
KPI-AP-1 :Number of research groups in the program.	5	3	3	
KPI-AP-2 :The number of supported research projects obtained by the program per year.	30	52	46	6
KPI-AP-5 :Percentage of students' graduate projects related to the surrounding community	35%	45%	40%	50%
The percentage the published articles related to the local society needs.	50 %	53/135= 38.5%	53/135= 38.5%	0/135= 0%

Performance Indicators	Target Benchmarks	Actual Benchmarks	male	female
Percentage of supported research groups related to the surrounding community to total number of supported research groups in the program	50 %	9/9=100%	9/9=100%	2/9=22.2%
Percentage of supported research projects obtained by the program related to the society needs to total number of supported research projects in the program per year	50%	21/52=40.3%	20/52=38.4%	2/52=3.8 %
Ratio of faculty members who participated in scientific activities to the total number of faculty members in the program	70%	80 %	80%	80%
Percentage of students who participated in scientific activities	50%	30%	25%	35%
The number of students participating in scientific forums and their accompanying activities and events	40%	48%	28.1%	6%

KPI-P-14: Percentage of publications of faculty members

NCAAA KPI Reference Number: KPI-P-14 :Percentage of publications of faculty members					
Actual Benchmark			Target Benchmark	Internal Benchmark** *(previous data)	New Target Benchmark
Male	Female	Average			
100%	90%	95%	100%	94%	100

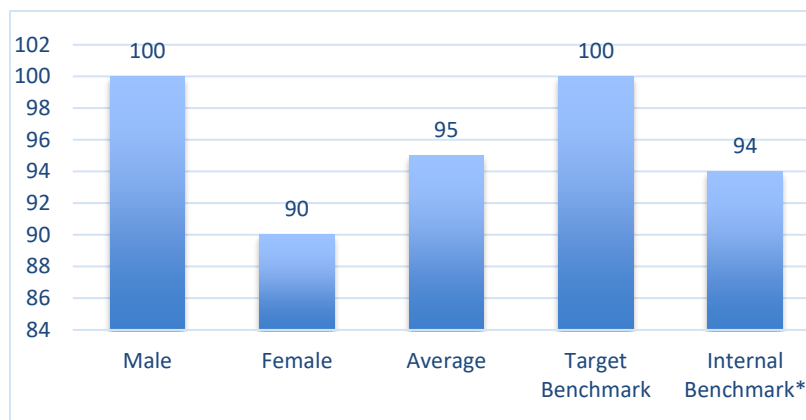


Figure 1: Percentage of publications of faculty members.

• **Analysis:**

Figure 1 shows that the Percentage of publications of faculty members for male section is 100%, while for the female section is 90% by average 95%. The average is near to the internal benchmark which is (94%). 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%

Strengths

The percentage of publications of faculty members for both male and female section has been increased in the last three years.

• **Recommendations**

- Opening channels of communication between the program and other programs in the scientific research .
- Making partnerships and agreements with (like: public hospitals Nuclear and Radiological Regulatory commission and Renewable Energy Center in Al jouf...) to use its laboratory to publish more papers.

No. KPI	recommendation	Action	Responsible	Follow up	Start date	Complete date
KPI-P-14	Increasing the publication by opening channels of communication between the program and other programs in the scientific research.	Involve the faculty member in group research	Program Administration	Scientific commetti	September 2022	May 2023
	Making partnerships and agreements with (like: public hospitals Nuclear and Radiological Regulatory commission and Renewable Energy Center in Al jouf.). to use its laboratory to publish more papers	Making partnerships and agreements with public hospitals Nuclear and Radiological Regulatory commission and Renewable Energy Center in Al jouf.).	Institution	Scientific commetti	September 2022	May 2023

KPI-P-15: Rate of published research per faculty member

NCAAA KPI Reference Number: KPI-P-15 :Rate of published research per faculty member			
Actual Benchmark	Target Benchmark		

Male	Female	Average		Internal Benchmark* * (previous data)	New Target Benchmark
7.5:1	5:1	6.5:1	5:1	4.22:1	7:1

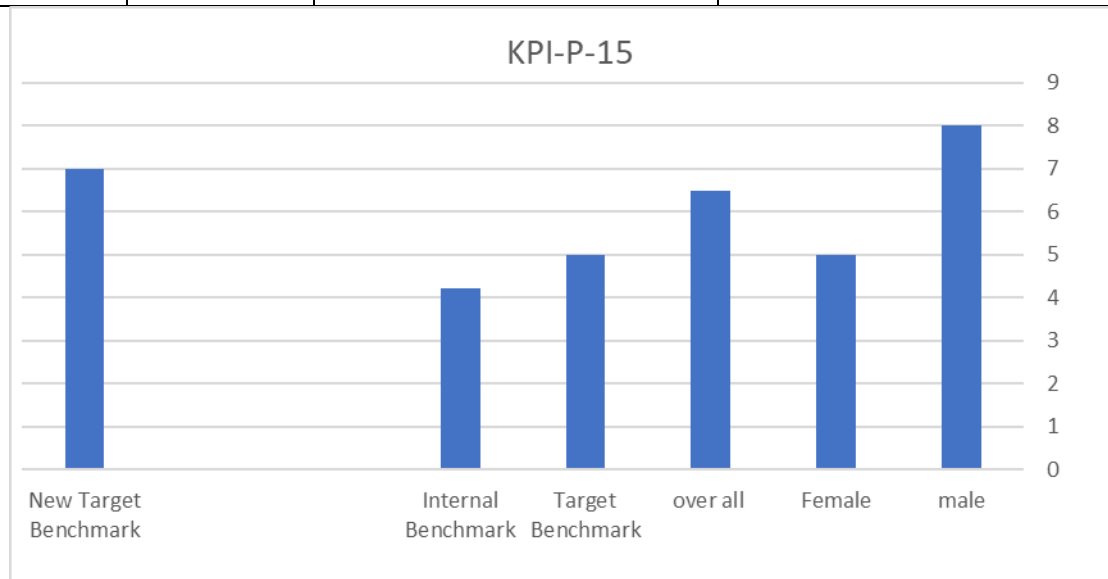


Figure 2: Rate of published research per faculty member in physics program.

• **Analysis:**

Figure 2, shows that the Rate of published research per faculty member for **male section** is 7.5:1, while for the **female section** is 5:1 by average 6.5:1. From The obtained result it is clear that the actual performance indicator of the rate of published research per faculty member has been increased (6.5), and exceed the target performance (5) and the internal value. Based on the analysis of the indicator's development, the target performance indicator value will be increased. The new value is 7:1.

• **Strengths**

The actual performance indicator of the rate of published research per faculty member for both male and female branch has been increased together.

- **Recommendations**
 - Opening channels of communication between the program and other programs in the scientific research.
 - Making partnerships and agreements with (like: public hospitals Nuclear and Radiological Regulatory commission and Renewable Energy Center in Al jouf...) to use its laboratory to publish more papers.
 - Report of the number of full-time teaching staff from Deanship of Human Resources
- **Proposal Action plane.**

No. KPI	recommendation	Action	Responsible	Follow up	Start date	Complete date
KPI-P-15	Opening channels of communication between the program and other programs in the scientific research.	Involve the faculty member in group research	Program Administration	Scientific commetti	September 2022	May 2023
	Making partnerships and agreements with (like: public hospitals Nuclear and Radiological Regulatory commission and Renewable Energy Center in Al jouf.) to use its laboratory to publish more papers	Making partnerships and agreements with public hospitals Nuclear and Radiological Regulatory commission and Renewable Energy Center in Al jouf.)	Institution	Scientific commetti	September 2022	May 2023

KPI-P-16: Citations rate in refereed journals per faculty member

NCAAA KPI Reference Number: KPI-P-16 :Citations rate in refereed journals per faculty member

Actual Benchmark			Target Benchmark	Internal Benchmark** *(previous data)	New Target Benchmark
Male	Female	Average			
85:1	50:1	67.5:1	65:1	63.1:1	70:1

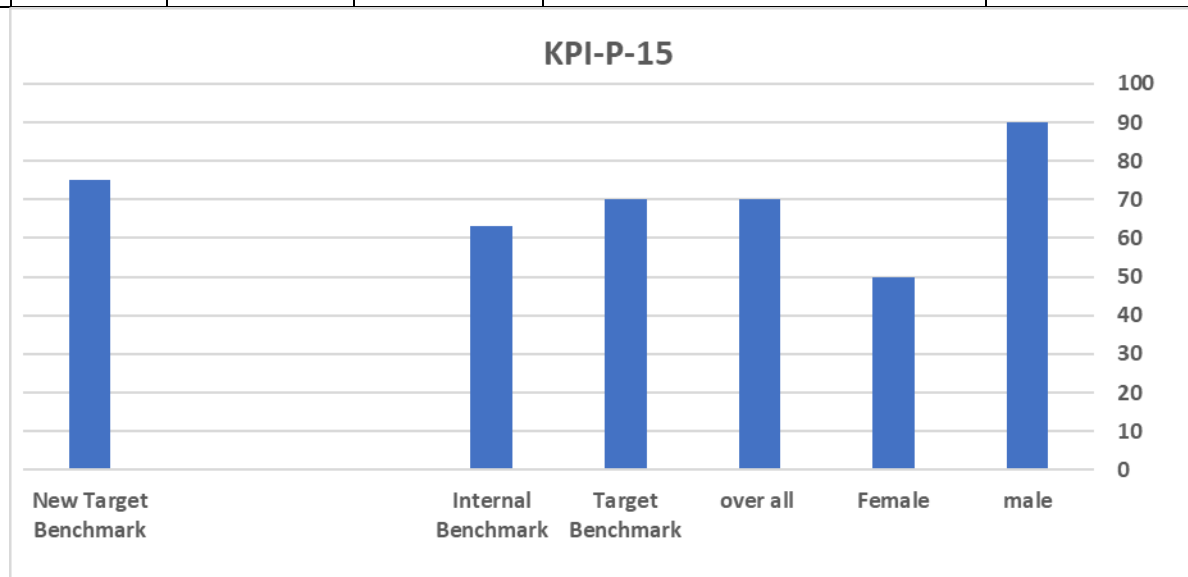


Figure 3: Citations rate in refereed journals per faculty member in physics program.

• **Analysis:**

The Figure above shows that the Citations rate in refereed journals per faculty member for **male section is 85:1**; while for **the female section is 50:1 by average 67.5 :1**. From The Results it is clear that the actual performance indicator value (70) 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 (65) 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.

• **Strengths**

It is clear from the value of the actual performance indicator of the Citations rate in refereed journals per faculty member in the physics program in the last year has been increased for both male and female sections.

• **Recommendations**

1- Opening channels of communication between the program and other programs in the scientific research to improve their publications in high impacted journals.

• **Proposal Action plane.**

No. KPI	recommendation	Action	Responsible	Follow up	Start date	Complete date
KPI-P-16	More a cooperations between the program and reputable laboratories to improve their publications in high impacted journals.	Involve the faculty member in group research	Program Administration	Scientific commetti	September 2022	May 2023

KPI-AP-1: Number of research groups in the program

NCAAA KPI Reference Number: KPI-PA-1 :Number of research groups in the program						
Actual Benchmark			Target Benchmark	Internal Benchmark* * (previous data)	New Target Benchmark	
Male	Female	Average				

9	0	9	5	2	12
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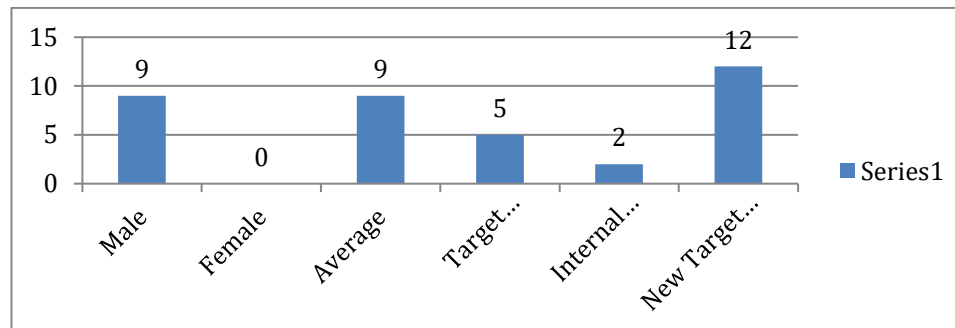


Figure 4: Number of research groups in the program.

- **Analysis:** Figure 4, shows that the Number of research groups in the program for male section is 9 , while for the female section is zero by average 9. The average is higher than the internal benchmark which is (5) .

- **Strengths**

The Number of research groups in the program for male section is 9.

- **Recommendations**

- 2- Opening channels of communication between the program and other programs in the scientific research .
- 3- Making partnerships and agreements with (like: public hospitals Nuclear and Radiological Regulatory commission and Renewable Energy Center in Al jouf...) to use its laboratory to publish more papers.

- **Proposal Action plane.**

No. KPI	recommendation	Action	Responsible	Follow up	Start date	Complete date
KPI-AP-01	<p>1- Encouraging faculty members to cooperate and work during research groups with the aim of scientific exchange, increasing acquired skills, and scientific cooperation inside and outside the program and fill the shortage in some scientific devices for some measurements.</p> <p>2- Cooperation with universities and international laboratories</p> <p>3- Establish research groups and obtain funding from multiple sources</p>	Involve the faculty member in research in group	Program Administration	Scientific commetti	September 2022	May 2023

KPI-AP-02: The number of supported research projects obtained by the program per year

NCAAA KPI Reference Number: KPI-AP-2 :The number of supported research projects obtained by the program per year					
Actual Benchmark			Target Benchmark	Internal Benchmark* * (previous data)	New Target Benchmark
Male	Female	Average			
46	6	52	15	30	30

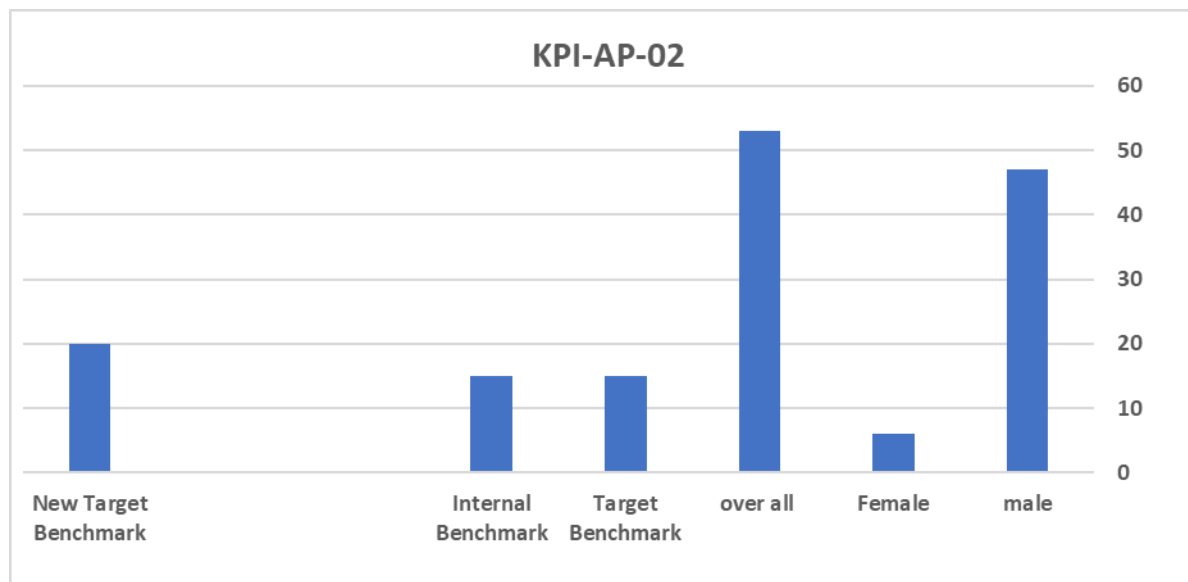


Figure 5: The number of supported research projects obtained by the program per year.

- **Analysis:** Figure above shows that the actual performance indicator of the number of research projects received by faculty members in the program has been increased and reached to 47 for male section and 6 projects for female section and the total number is 53 projects by An increase of 176 % over the previous year and the target(15) has been achieved. 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 (20).
- **Strengths**
 - The actual number of supported research projects obtained by the program per year is rapidly increased in male section
 - Although the number of supported research projects obtained by female section is increased but its value is very low when compared with male section and need to improve.

No. KPI	recommendation	Action	Responsible	Follo w up	Start date	Complete date
KPI-AP-02	1- Cooperation with universities and international laboratories 2- Establish research groups and obtain funding from multiple sources	Involve the faculty member in group research	Program Administration	Scientific committee	September 2022	May 2023

KPI-AP-05: Percentage of student graduation projects related to the surrounding community

API-P-05: Percentage of student graduation projects related to the surrounding community					
Actual Benchmark			Target Benchmark	Internal Benchmark* * (previous data)	New Target Benchmark
Male	Female	Average			
40%	50%	45%	35 %	29 %	50 %

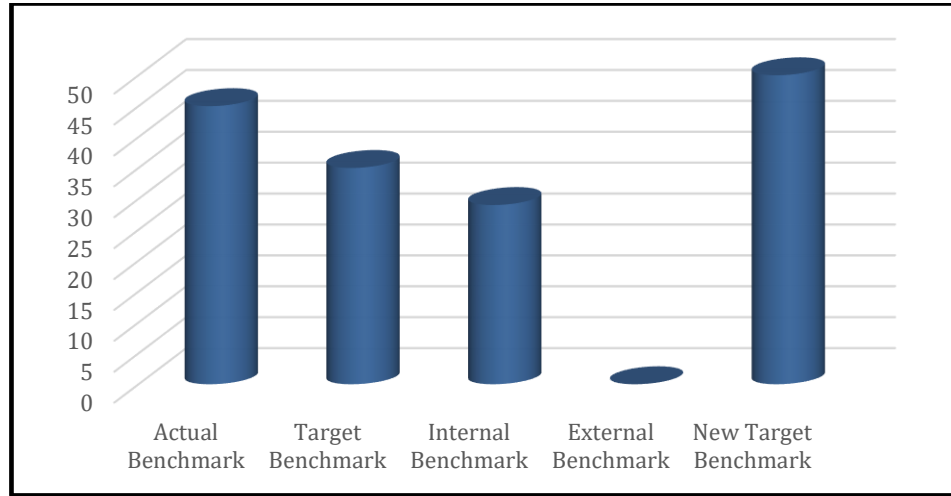


Figure 5: Percentage of student graduation projects related to the surrounding community

• **Analysis:**

The results indicate that the actual performance indicator of Percentage of student graduation projects related to the surrounding community in the program has been slightly increased and reached % 45 in the last year and exceeds the target benchmark 35%. 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 (50%).

• **Strengths**

The actual performance indicator of Percentage of student graduation projects related to the surrounding community in the last year has been increased to achieve and pass the target performance.

Recommendations

- 1- Making graduation projects available for reading and viewing the department's website for community service.
- 2- Establishment of database that contains topics related to the surrounding community and can be implemented through student projects.

• Proposal Action plane.

No. KPI	recommendation	Action	Responsible	Follow up	Start date	Complete date
KPI-AP-05	1- Making graduation projects available for reading and viewing the department's website for community service.	Load the graduation projects on the home page of the Physics department on the college website	The department's media committee		September 2022	June 2023

Head of scientific committee

Head of Physics department

Prof. Mohamed Amin Uosif

Dr. Alhulw Alshamma