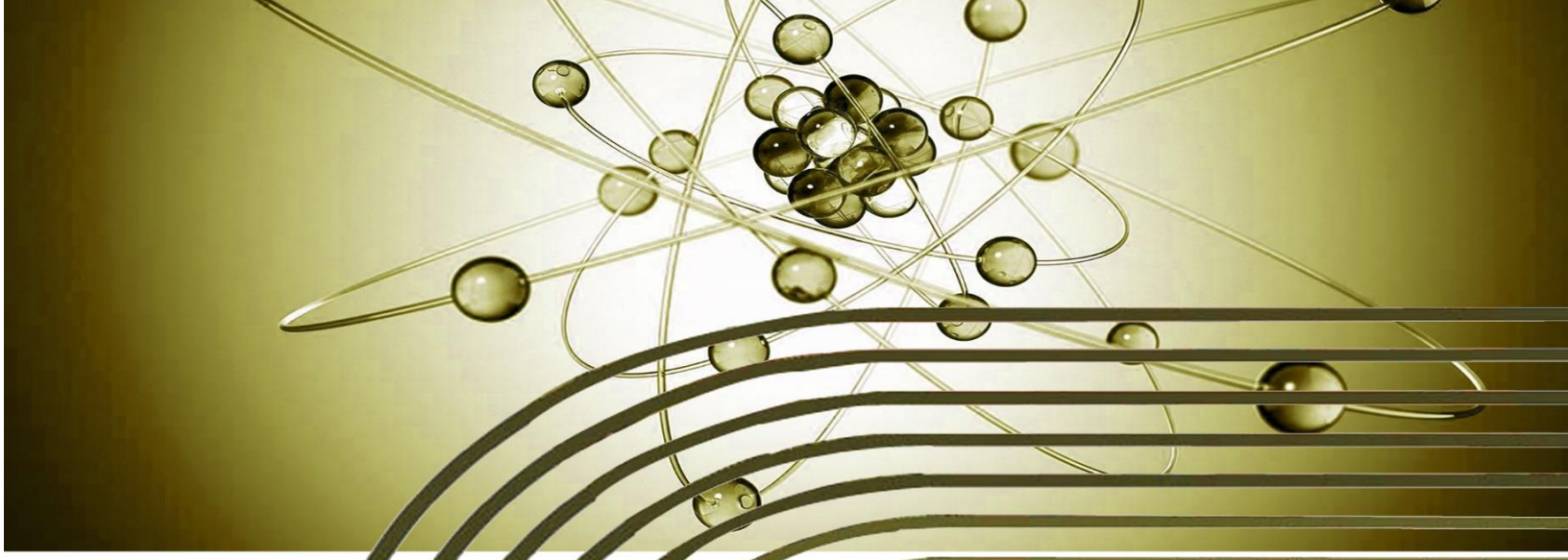


رؤية VISION 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

كلية العلوم
College of Science

جامعة الجوف
Jouf University

Qulity Assurance manual of Physics Program

3rd Edition

معتمد
ACCREDITED

Introduction

The quality system deals with providing the best practices of quality and development in higher education. The mean aim of quality is achieving the higher level of higher education development and enhancing teaching practices, to assure an accredited program and educational outcomes to serve the society. Quality Assurance process determines both strengths and weaknesses, and corrective and protective plans in academic programs leading to its quality improvement. Teaching quality is becoming a strategic direction of the higher education repairs in the Arab area and in the heart of Saudi Arabia. Physics Program will achieve that via execute its mission and objectives which are in consequence with Jouf university mission and objectives.

1-2 Definitions

Quality

The value, quantitative amount, or level conferred to an educational program according to standards. Quality evaluation is based on performance that is adopted to the standards and the suitability of the objectives to the mission, and the extent to which they are achieved.

Quality in Education

Quality is a multidimensional concept that embraces all of the institution's functions and activities: teaching and learning, resources and equipment, faculty and staff development, student services, infrastructure, and engagement with the community**.**

Quality Assurance

Regular and planned review processes involving continuous follow-up to ensure that the institutions or programs meet the specified standards or requirements to maintain the required level of quality performance and services and developing it to match the levels of practice in internationally distinguished institutions or programs.

Quality Control

It is the process used to ensure quality in a product or a service.

Academic Program

A set of courses and practical elements leading a student to award of an academic degree upon successful completion.

Program

A set of courses, activities and learning experiences designed to achieve specific objectives and learning outcomes over a period of time and which, upon successful completion leads to a specific scientific degree or qualification.

Course:

Scientific content in one of the fields, which constitutes a set of knowledge and skills based on appropriate teaching strategies and evaluation tools. It helps achieve the goals and learning outcomes of the program.

Academic qualification:

A degree awarded to a student upon the completion of an integrated program such as the bachelor's degree.

Accreditation

Formal certification by a recognized authority that program meets required academic accreditation standards

Continuous Improvement

Ongoing enhancement of inputs, processes and outcomes that improve the quality of performance, usually across the whole range of an institution's/program's activities.

Academic Accreditation Standards

Statements comprising the principles, quality practices and conditions that must be met by institutions or programs to be accredited by the NCAAA.

Action Plans

The set of different activities that are design in clear sequence to accomplish specific goals.

Annual Report

This is annual self-evaluation report for the educational institution that is prepare based on the reports of academic programs and the various activities that fulfill the mission of the institution.

Review

This is process of reviewing and evaluating the programs and activities by internal auditing committee and by independent external individuals (Reviewers).

Self- evaluation Scales

A document in which an institution or a program evaluates itself on a scale of five against the standards set by the NCAA.

Self-study Report

A self-evaluation report on the quality and effectiveness of an institution or a program seeking accreditation prepared by the institution or program itself and based on the standards set by the NCAAA.

Saudi Arabian Qualification Framework (NQF)

The SAQF is a framework that is intended to support the development of skills and competence for transforming economy, personal development, mobility and employability and drive career paths, including improved opportunities for transferability between academia, training and employment.

Learning Outcomes

The knowledge and targeted skills acquired by students in a program courses or educational program.

Teaching strategies

This is specific methods such as case studies, practical work, and class discussion, which are applied to develop students' knowledge and skills in various fields.

Key performance indicators

These are variables use assess the program performance by comparing actual results with the planned ones.

Stakeholders

They include students and graduates (alumni), faculty, staff, employers, providers of funds, members of the communities served by the institution and any other groups with which the institution/program is involved.

1-3 Mission and Objectives:

1-3-1 Mission

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

1-3-2 Objectives

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. Executing a pioneer scientific and applied research in the field of physics.

Physics program mission and objectives are in consequence with College of Science and Jouf University missions and objectives.

1-4 The Program Quality system

Physics program seeks usually for continues improvement. The quality system in the program covers all the activities in all levels. The program chart (see Fig 2) contains different committees that cover the activities and the processes in the program. The quality assurance system aims to support and assure the quality of the processes according to the academic standards

The Quality assurance system in physics program depends on many principles to achieve efficiency and sustainability:

1- The Standards of program accreditation (NQAAA) are considered the basic to build up a quality system
2- The program must have committees with specified tasks

3- The quality system depends on identify the inputs, the processes, and outcomes then the implementation of the best practice activities of the notational standards and measuring its efficiency according to key performance indicators.
4- The auditing and self- evaluation are the guiding to assure the continues development.

In the following chapters will introduce full presentation about the above principles and explaining how the quality system works on these principles

2-1 The Standards of program accreditation (NQAAA)

Academic accreditation in Saudi Arabia is guided by the stated policies in this Policy Book. The National Center for Academic Accreditation and Evaluation (NCAAA) (hereafter "the Center") is the statutory body, under the umbrella of the Education and Training Evaluation Commission (ETEC), responsible for the accreditation and evaluation of higher education institutions and programs in Saudi Arabia, in the public and private sectors, by virtue of the Council of Ministers' Cabinet Decision No. 108 dated 14/02/1440AH (October 23, 2018).

Physics program is adopting the national academic standard from National Center for Academic Accreditation & Evaluation (NCAAA).

NO.	Standards	Sub Standard	Criterion
1	**Mission and Goals**	1	6
2	**Program management and quality assurance**	2	24
3	**Teaching and learning**	3	25
4	**Students**	1	16
5	**Faculty members**	1	12
6	**Learning resources, facilities, and equipment**	1	13

Fig (1) Accreditation Standards

Standard 1: Mission and Goals

The program must have a clear and appropriate mission that is consistent with the mission statements of the institution and the college/department and support its application. The mission must guide program planning and decision-making processes. The program goals and plans must be linked to it, and it must be periodically reviewed.

Standard 2: Program management and quality assurance

The program must have effective leadership that implements the institutional systems, policies, and regulations. The program leadership must plan, implement, monitor, and activate a quality assurance system that achieve continuous development of program performance in a framework of integrity, transparency, fairness and within a supportive organizational climate.

Standard 3: Teaching and learning

Graduate attributes and learning outcomes at the program level must be precisely defined, consistent with the requirements of the National Qualifications Framework and with the related academic and professional standards, and the labor market requirements. The curriculum must conform to professional requirements. The teaching staff must implement diverse and effective teaching and learning strategies and assessment methods that are appropriate to the different learning outcomes.

The extent of achievement of learning outcomes must be assessed through a variety of means and the results are used for continuous improvement.

Standard 4: Students

The criteria and requirements for student admissions in the program must be clear and publicly disclosed and must be applied fairly. The information about the program and the requirements for completion of the study must be available, and students must be informed about their rights and duties. The program must provide effective guidance and counseling services, and extracurricular and enriching activities to its students. The program must evaluate the quality of all services and activities offered to its students and improve them. The program must follow its graduates.

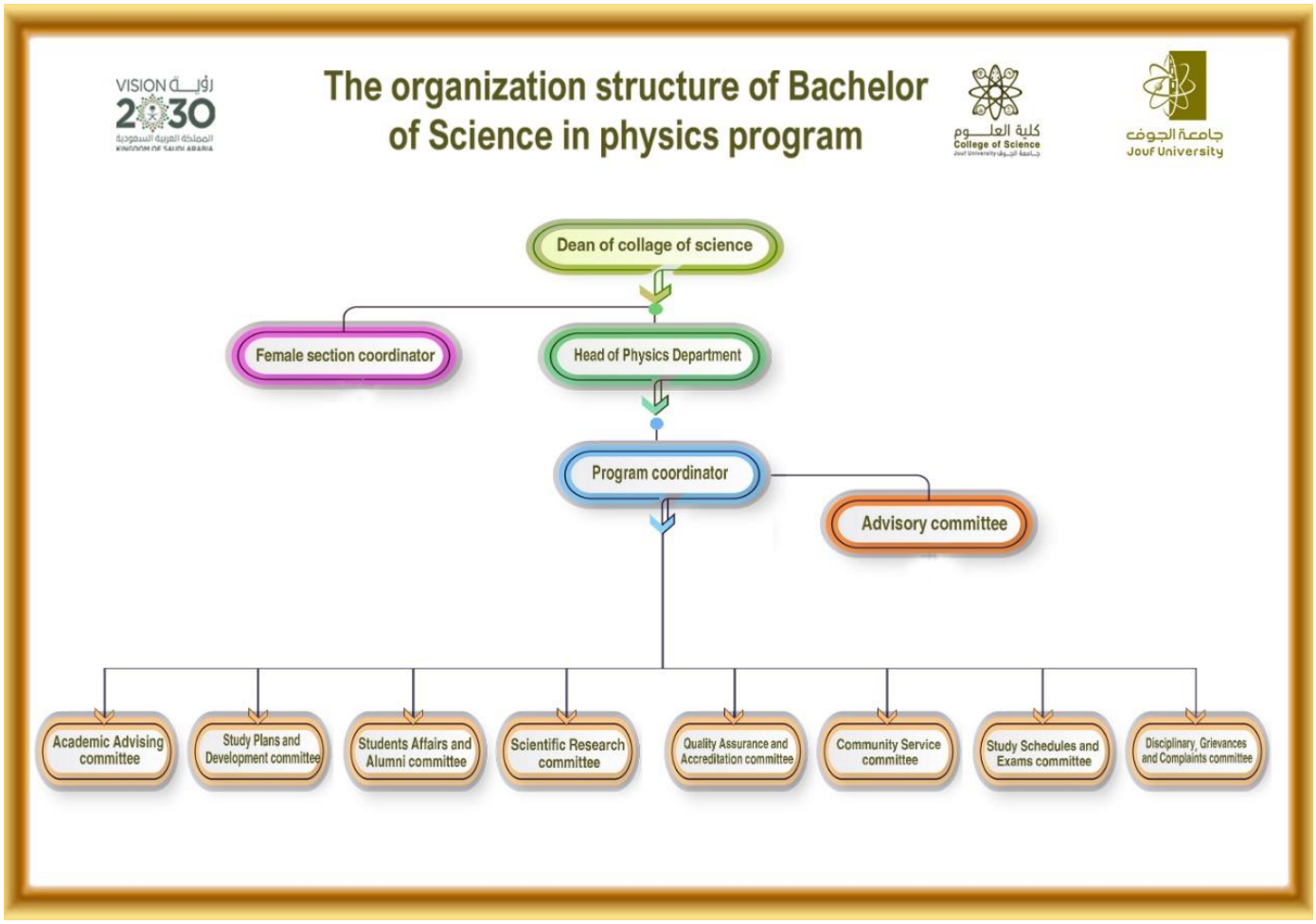
Standard 5: Teaching staff

The program must have sufficient numbers of qualified teaching staff with the necessary competence and experience to carry out their responsibilities. The teaching staff must be aware of current academic and professional developments in their fields of specialization, participate in research and community service, and in improving the program and institutional performance. Teaching staff performance must be evaluated according to specific criteria, and the results of these evaluations must be used for development.

Standard 6: Learning resources, facilities, and equipment

Learning resources, facilities, and equipment must be adequate to meet the needs of the program and its courses; and must be available to all beneficiaries using an appropriate arrangement. Teaching staff and students must participate in identifying such resources based on their needs, and in assessing their effectiveness.

2-2 Physics Program structure:



Department Council

Department council consists of assistant and associate professor in both campus (main & female) and is chaired by the head of the department. The department council is formed at the beginning of every academic year based on a decision by the president of Jouf University and recommendation of College of Science Dean.

The department council meets at least once a month, at the call of the chairperson, to study all critical issues of the department, set strategic directions, discuss regulations and operation guidelines, and decide on all academic as well as non-academic issues. The department Council also reviews the policies, practices, and procedures of the department. The department council meetings are conducted using video conferencing facilities since the faculty members of the female branch are council members.

The topics discussed by the department council are referred from the head department. According to department procedures, the minutes of meetings and decisions of department have to be endorsed by the department council's approval. The decisions of the permanent or temporary committees are not final unless approved by the department council.

The Council meeting is considered official only if one-third of the members attend the meeting. No decisions are taken unless they gain the absolute majority of votes among the members who are present. However, if there is a tie in the voting, the Chairperson will have the deciding vote.

Head of the department

1- Hold the responsibility for leading the department with vision, creativity and excellence.
2- Provides collaborative and collegial leadership for the department.
3- Designs and implements the academic plan as it relates to the department.
4- Develops, implements, promotes, and evaluates curriculum.
5- Supervises the management, development, and evaluation of curriculum for the department.
6- With the help of the faculty members, recruits, supervises, and evaluates full-time and adjunct department faculty and support staff.
7- Promotes and fosters professional development activities related to academic leadership, classroom instruction, instructional technology, and support staff development.
8- Develops and implements department budget and planning documents.

9- Works with department faculty to coordinates student program activities.

10- Ensures the vitality, currency, and academic excellence of the department programs.

Program coordinator

- Executing the tasks assigned by the department's curriculum and plans committee or the academic program director.
- Follow up the implementation of the study program through:
- Verify that students have acquired the learning outcomes of the course.
- Verify the application of the recommended teaching strategies in the course descriptions of the course.
- Verify the application of the recommended student assessment methods in the course description of the course.
- Follow up on the interpretation of the abnormal results for the students of the course with the course instructor.
- Study the difficulties facing the implementation of the academic program, and submit a report to the head of the department's curriculum and plans committee.
- Submit proposals related to the development of academic curricula to the head of the department's curriculum and plans committee.
- Preparing and discussing the annual report of the academic program with the faculty members of the department, and submitting the annual report of the program and its related recommendations to the head of the department's curriculum and plans committee.
- Collecting statistical data related to the study program, and submitting a report thereon to the head of the department.
- Studying the training needs of the department members, and submitting a report thereon to the head of the priest

Committee name	Tasks
Scientific Research Committee	- Develop and implement the program's research plan - Follow up on scholarships, study their status, and do the necessary to respond to their requests and inquiries. - Follow-up of lecturers and teaching assistants and help in selecting the appropriate universities for scholarships. - Prepare an occupational safety and risk management plan. - Supervising graduation projects and distributing them according to the program's research plan - Preparing a maintenance plan for laboratories - Preparing for conferences - Determining the needs of laboratories and supervising the work of tenders and supplies
Quality Assurance and Academic Accreditation Committee	- Ensuring the quality of the program and the quality of the educational process in term of the policies of Al-Jouf University. - Follow-up the implementation of the student evaluation process in term of the policy of Al-Jouf University to evaluate students. - Preparing reports of the learning outcomes measurement plan and presenting them to the department council for discussion and approval. - Preparing annual reports and reports of performance indicators and presenting them to the department council for discussion, approval, and follow-up on the implementation of recommendations. - Preparing and implementing a plan for extra-curricular activities - Preparing periodic review reports and continuous improvement plans at the level of courses and programs and reviewing the exam paper.

Committee name	Tasks
Academic Advising Committee	- Preparing an academic advising plan, activating it and following up - Counting the numbers of students and distributing them to the members of the department, and following up the preparation of the academic advising file by each advisor. - Follow up on academic advising, and submit reports to academic advisors in the form of one periodic report at the end of each semester. - Preparing reports of students' progress during their studies and evaluating them, following up the performance of students who have failed academically, and improving their levels.
Schedules and Exams Committee	- Prepare the exams schedule. - Setting study schedules in the program, coordinating with other departments and colleges that have subjects taught in the department or college, coordinating with the Deanship of Admission and Registration in relation to these schedules, and making data linking the sections.
Study plans and development committee	- Studying, updating and developing study plans, in accordance with the criteria for preparing and reviewing study plans. - Program planning and description - Monitoring the needs of society and the labor market and developing study plans to meet those needs. - Surveying the opinion of employers, graduates and other stakeholders to build a study plan that meets the aspirations and needs of the labor market.
Community service committee	- Preparing and activating the community plan - Working to open channels to connect the graduate to the labor market

Committee name	Tasks
Disciplinary, Grievances and Complaints Committee	- Looking into the irregularities of students - Recommending disciplinary sanctions according to the rules and regulations - Research grievances and complaints of students and decide on them - Establishing mechanisms for grievances and complaints
Academic Affairs Committee	- Follow-up requests for the academic movements of male and female students (re-enrollment - additional opportunities - - deleting and adding a visiting student outside and inside the university). - Preparing and activating a training plan for students and graduates - Preparing a database of graduates and their employers. and communicate with them - Announcing graduate programs that serve the community and the university.

Quality Management system structure

Internal audit Committee

Auditing and reviewing the following program documents:

- Program specification
- Courses specifications
- The final examination papers
- Courses reports
- The program learning outcomes
- Carry out the any tasks assigned to them by the head of the department

Key Performance Indicators (KPIs) committee

1- Distribution of the KPIs for the responsible committee
2- Write the report of KPIs
3- Write the improvement plan

Annual report and work plan committee

1. Prepare the report work plan
2. Prepare the annual report
3. Follow up KPI-P-01

Self-Study committee

1. Prepare the self-evaluation report
2. Prepare the self-study report

Prepare and analysis of Questioner committee

1. Prepare the questioners
2. Analysis of the questioners and prepare the improvement plan

Learning outcomes measurement committee

1. Measuring the program learning outcomes
2. Analysis the PLOs
3. Prepare the improvement plan

Quality assurance system

Quality assurance process is an ongoing process of planning and evaluation. The program has a structural process to ensure the quality of the program. This process depends on both direct and indirect methods of measuring the quality of the offered program with the Key performance indicators (KPI) and bench mark the director of improvement. The program improvement is guided by the collage strategic plan. There are two main levels of evaluation: annual evaluation and periodic evaluation which occur every five years The program ensures high quality performance for the whole educational and supportive administrative process through the following process: ❖ First: Planning which include preparing the program plan which is integrated with the program objectives and the program (KPI).

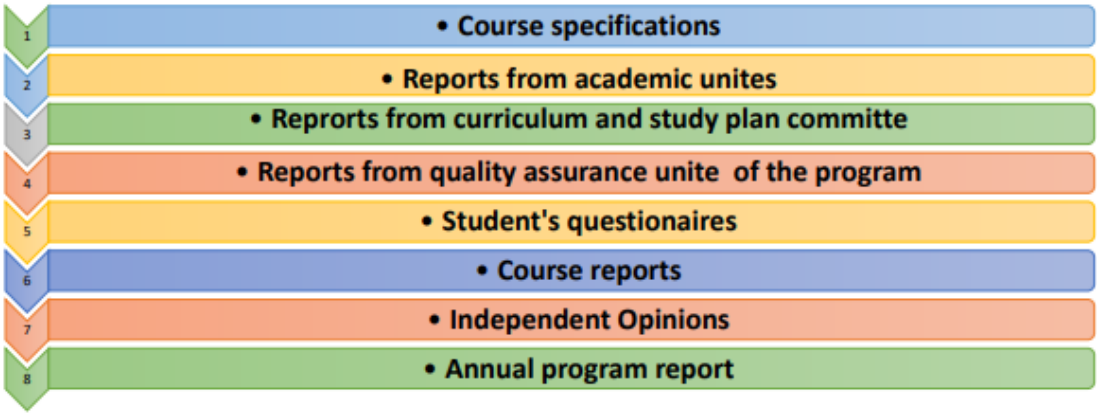
❖ Second: Implementation where all parts of the plan is fulfilled through-out the academic year.

❖ Third: Monitoring the outcome through the extent of fulfilling of the KPI and action plan

❖ Fourth: Performance evaluation is done through writing both reports the department and program reports with identifying points of strength and improvement opportunities which is included in next year the program annual report which integrate all the data gathered along the year to write the progress report on previous plan and formulate a new action plan to be fulfilled the next year.

❖ Fifth: Improvement plans which is based on the annual report's strengths and improvement opportunities, which lead improvement plan which should be implemented on next year.

❖ Sixth: Periodic reviews: Periodic review should be comprehensive and include a reexamination of the environment in which the program operates and any changes or expected developments of program activities. A report should be prepared that includes an analysis of changes in the original plans that may have occurred during the period, assessments of the degree of success in achieving the objectives, and assessments of the strengths and weaknesses that need to be addressed in future planning, and planning responses to these assessments.



The procedures of quality assurance management at Physics program

The system in physics program consists of :-

1- Inputs
2- Processes
3- Outputs

1- Inputs:

i. Supporting the academic program and the participation of faculty members
ii. Rules, regulations and circulars of the Ministry of Education.
iii. Jouf University Quality Assurance Policies
iv. Requirements of NCAAA
v. Documentation and benchmarking systems

2- Processes

i. Develop executive plans to ensure and improve the quality of the program based on a cycle model Cycle Review and Planning (NCAAA) and academic accreditation, considering the integration with the program's operational plan.
ii. Prepare annual operational plan to ensure quality in the program.
iii. Design process and templates for follow-up and evaluation.
iv. Follow-up and evaluation of the performance of the committees in the program.
v. Build up and develop of the documentation system.

3- Outputs

i. Operational Plan report
ii. Self-Study report
iii. Self-evaluation report
iv. KPIs report
v. Getting the accreditation certificate from NCAAA

The implementation of the inputs- processes and outputs will be through the application of the continues improvement cycle (PDCA Cycle).

➢ Continuous Improve Cycle

Continuous improvement is the act of continually looking to improve upon a process, product, or service through small incremental steps.

Phases of the Continuous Improvement Process (CIP)

There are four phases associated with the CIP. These phases are associated with the Shewhart Cycle:

- Phase 1 "**Plan**": Planning which include preparing the program plans which is integrated with the program objectives and the program Key performance indicators (KPI).
- Phase 2 "**Do**": Implementation where all parts of the plan is fulfilled through-out the academic year.
- Phase 3 "**Check**": Check to determine if the change had the desired outcome.
- Phase 4 "**Act**": If successful, implement across the organization and process.

Phase I: Plan

The planning in Physics program will be represented in the following:

Plans:

- The operational plan has plans for (Training and development, society serving, scientific research, quality management, Educational and research partnerships)
- Plan for the evaluation and review of the program

Policies:

Jouf University Policies to assure the quality system in the academic programs:

1. Jouf University Academic Quality Assurance Policy
2. Monitoring the quality of teaching and learning at Jouf University
3. Policy for developing and creating academic programs and RASCI
4. Policy of examinations and student evaluation
5. Policy of verifying the standards of achievement for students at Jouf University
6. Professional and personal development policy
7. Student retention policy and increased completion rates
8. Standards and procedures of evaluation and periodic review of academic programs at Jouf University
9. Intellectual property rights protection policy at Jouf University

Phase II: Do.

1. Physics program has different committees to execute the tasks of the operational plan and the program KPIs.
2. In Physics program there are Academic standard teams, their task is to fulfill the requirements of the program academic standard. Each team consists of leader and staff members. The number of the staffs is according to the requirements of the academic standards. The tasks of each academic standard teamwork are to achieve the standard via processes and documents.
3. Implementation of the policies

Phase III: Check

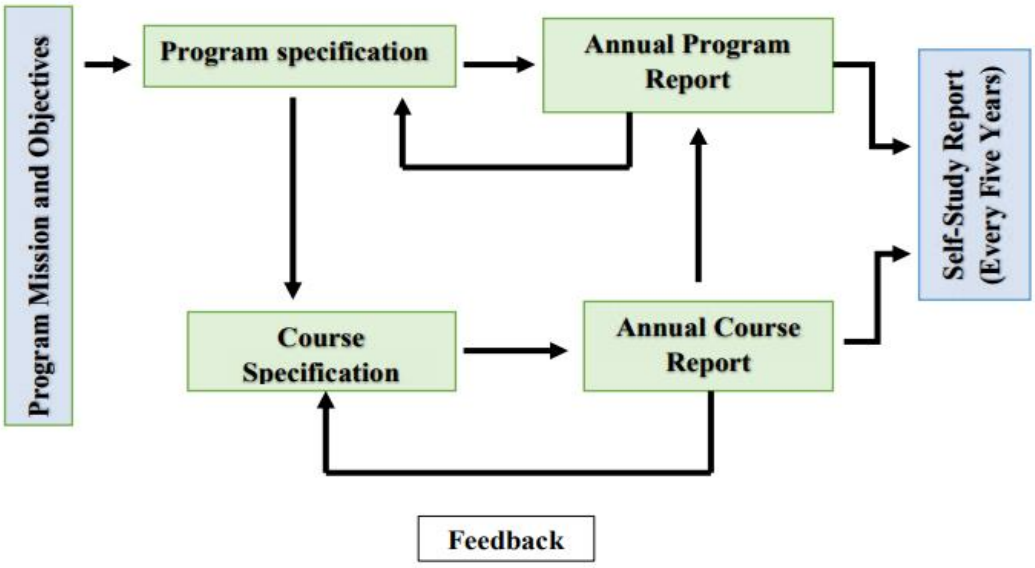
Quality Assurance cycle in Physics Program

The Program assurance process for academic program starts from the college Mission and objectives which explain the reason of the presence of the college and its purpose. From this point the Program mission is formulated which is derived from college mission which lead to the development of program objectives. Each academic program identifies its graduate attributes with regarding to labor market and stakeholder expectation and aligned with both college and University graduate attributes. Program uses a development framework for demonstrating the links between program graduate attributes, in relation to program learning outcomes, as well as courses learning outcomes. Course curriculum, including course objectives and assessment criteria, is consistent with graduate

profiles, to ensure there is a strong link between the attributes of graduates and actual intended learning outcomes of the program.

Program learning outcomes are formulated defining what the student will gain through all the program from Knowledge, skills and competencies. The curriculum, assessment methods and criteria used to evaluate performance must be consistent with these learning outcomes. Program learning outcomes must be consistent with the requirements of the Saudi Arabia Qualifications Framework (SAQF), as well as the labor market requirements, and as per the requirements for professional practice in Saudi Arabia in the fields of practice

The Quality assurance process starts by formulation of program specification, then course specification-Which is approved by the standing Committee of study plans and University council in Jouf University. So, course learning Outcomes are consistent with program Learning Outcomes. Followed by the preparation of course reports which lead to program report. Which is also based on stakeholder evaluations and units and committee reports. Program reports leads to improvement plans which is fulfilled and monitored in the next year and the cycle goes on. After five year the program prepare the self-study report and the cycle goes on.



Cycle of quality assurance at Physics program

The program annual report – based on NCAAA forms- is a key stone in maintaining high quality performance for the whole educational and supportive administrative process. It integrates all the data gathered along the year to write the progress report on previous plan and formulate a new action plan to be fulfilled the next year. This report includes the following:

First Statistical Information which give brief description on student enrolment, accomplishment and graduation which include:

• Number of students who started the program in the year concerned.

• Apparent completion rate.

• Enrollment Management and Cohort Analysis.

• Destination of graduates as shown in survey of graduating students.

Second Course Reports Information Summary to ensure the quality of delivering the courses and proper assessment for the students which includes:

- Analysis of Significant Results or Variations.
- Delivery of Planned Courses

Third Summary Program Evaluation:

- Graduating Student Evaluations (surveys).
- Employers' evaluation survey.

Fourth Program Course Evaluation and KPI assessment:

- All program courses taught during the year.
- Program Learning Outcomes Assessment. • Orientation programs for new teaching staff.
- Professional Development Activities for Faculty, Teaching and Other Staff.

Fifth Independent Opinion on Quality of the Program

- Program KPI and Assessment Table.
- Program Action Plan Table.

Finally, Program action Plan Progress Report This sequence shows the detailed assessment and analysis carried by the program to ensure the quality of the delivered program.

Auditing in Physics Program

A- Internal Auditing:

This is done by the dean ship of development and Quality in two phases: First submitting an electronic program Data through platform and electronic copy of NCAAA six standards verification documents then second stage involves site visits to the academic program by a selected Teams formed by members of Deanship of Development and Quality and the Standing Committee of Quality. Site visits during internal audits involve meeting and interviews with programs' stakeholders (e.g. students and faculty) to ensure that reality is well reflected in the programs' quality documents. Internal audits always end with a full report sent to the colleges/programs containing a number of strengths and action recommendations for improvement, of which programs managers are asked to respond with action plans. Progress in these action plans is evaluated in the next internal audit round. This will be followed by a report including Strength and improvement opportunities, where the program has to submit an improvement plan for these recommendations which will be verified on next year Internal Auditing.

Usually, the quality committee in physics program executes the following:

1. External Auditing for Course specification.
2. Internal Auditing for Course specification.
3. Internal Auditing for program report.
4. Internal Auditing for Course specification 2020.
5. Internal Auditing for Course report.
6. Internal Auditing of Field Experience course specification 2019.
7. Internal Auditing of Field Experience course report.
8. Questionaries''.

B- External Auditing and independent opinion and its forms, controls, standards, and mechanisms

An independent reviewer should review all the program operations, activities and outputs/outcomes of the program through verification of all documents supporting the program processes and visiting the program facilities. Then this reviewer will provide the program with a detailed report about

strength ang recommendation for improvements, which will be used by program director to enhance the quality of educational process.

To ensure the quality of the physics program, the program must be subject to external audit (independent opinion) periodically - at least once - to ensure the quality of program specification, the courses and their reports, and the results of the internal evaluations by the program (once with each full program cycle). The program is subject to external audit once the completion of the self-evaluation and writing a self-study report before applying for program accreditation (once every 3-4 years).

The external auditors (independent opinion) should be selected with expertise from the same specialization, preferably from accredited programs or participated in accreditation processes for similar programs (peer evaluators). In their selection, the following conditions should be met:

1- Experience
2- Recognition: The evaluated program recognizes the importance of their role in the development process.
3- Independence: It is essential that the assessors be completely independent of the educational institution being reviewed so that there is no conflict of interest.
4- Familiarity with the national standards for accreditation for the program.

External Audit Mechanisms

1- The external auditor is obligated to review all of the program specification, course specification, and program and courses reports.

   - The External Auditor must write his report within two - three weeks of the date of receiving the program documents (program specification, course specification, program, and courses reports.)
   - Conducting 1-3 site visits as needed; To view the facilities and equipment at the program site and provide technical support.

2- The external auditor must review to review the report of the self-evaluation and the report Self-study report.

- The self-study repot must be sent to external reviewer to write the independent opinion.
- The External Auditor must complete the independent opinion report within two weeks of sending the program's self-evaluation metrics report.
- The external auditor must complete the independent opinion report within two to three weeks of the date of sending the self-study report
- Conducting 1-3 site visits as needed; To view the facilities and equipment at the program site and provide technical support.

The program Assessment Cycle:

Meaningful program assessment follows an intentional and reflective process of design, implementation, evaluation, reflection and revision. The following tools and resources are intended to support each stage of the program assessment cycle.

The BSc. of Physics Program uses different tools and processes to assess and evaluate the extent to which its PLOs are being attained. These processes are used to gather the data which is necessary for the assessments. Evaluation, in the form of interpreting the data, is then carried out to determine how well the outcomes are being attained. The results of both the assessment and evaluation processes are finally utilized for the continuous improvement of the program. The steps used for the assessment, evaluation, and feedback to the continuous improvement of the program follow the following three steps:

1. Assessment tools of the PLOs (i.e., collecting data) can be direct or indirect. Direct assessment of PLOs usually relies on the course work, whereas indirect assessments of PLOs are usually obtained by using surveys. This step includes designing forms of surveys and appropriate questions for determining to which level does the learning outcomes verified in the graduate students according to the opinion of the graduate his self and the employers.
2. The collected data is analyzed and compared to a pre-set performance indicator, which constitutes the evaluation processes.
3. Checking the degree to which the data evaluation results meet the pre-set targets will be the force for the continuous improvement processes.
4. The period of PLOs' assessment process takes full period of graduation (i.e, 4 years) to follow up students of the same section.
5. The direct assessment process based on selecting **capstone courses** from different levels to express logically all PLOs of "bachelor's degree in physics".

6. The capstone courses should be:

a. Required courses (core courses) for the bachelor's degree in physics.
b. Express clearly about strengths, weaknesses and gaps in students' performances, and
c. give students a firm foundation in the theoretical background in the Physics, and
d. reinforce and help student practicing, applying and mastering knowledge into an advanced problem or realistic situation, and
e. Make transition for student's thinking from the problem-solving mode in lower-divisioncourses to more sophisticated scientific thinking in physics.
f. develop and enhance students' critical thinking, problem solving and decisions' making, and
g. prepare students to the master levels, and
h. make students work on individual and group topics of their choice and illustrates their achievements, and
i. make connections between learning physics and on Work environment, and

Based on extensive regular meetings of the Internal Review Chairperson and all members in the Department Council. The committee targets the relevant mapped courses to measure (assess and evaluate) the achievement of students toward the relevant PLO and according to the assessment plan mentioned above. The committee recommended using Rubric for assessing and evaluating students' performance.

Achieving this strategy when targeting courses for measuring the achievement of students' performance toward each Learning Outcome requires selecting courses from different levels especially (levels 5,6,7 and 8) in the curriculum map. So, the assessment process was selected to be during the last two years of the whole period of graduation (i.e, 20-21 and 21-22)

These capstone courses will be selected to monitor students' learning and provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning and at the end of the program. The targeted courses corresponding to measuring each PLO are summarized in the table below.

Course Mapping of PLOs:

To set the stage for the assessment process, the material covered in each course, together with its expected course learning outcomes (CLOs), are used to identify the certain number of program learning outcomes that are most probably be covered by the course. It is important to mention here that each of the course CLOs should be associated with one of the chosen PLOs. Thus, the PLO with a single CLO implies that this CLO statement may be identical to that of the PLO. We should also emphasize that the capstone courses are exceptions to the above-mentioned mapping scheme and can have as many PLOs as needed.

To this end, each course has identified some specific number of measurable Course Learning Outcomes (CLOs) and these CLOs are mapped to the chosen different PLOs. This process of course-PLO mapping is carried out for each Department/College course. The mappings are made by each course team (involving course coordinator(s) and instructors, for the course) in consultation with the Program Quality Assurance Committee

Physics Program KPIs:

Performance indicators are important tools for assessing the quality of Academic Programs and monitoring their performance. They contribute to continuous development processes and decision-making support. The National Center for Academic Accreditation and Evaluation has identified 17 key performance indicators at the program level. All of which are in line with the evolving program accreditation standards. These indicators are the minimum to be periodically measured, and the academic program can use additional performance indicators if it believes they are necessary to ensure the quality of the program. The program must have additional and operational KPIs.

KPIs are used in the following:

1- Operational Plan
2- Program and Courses specifications
3- Program and Courses reports
4- Annual reports
5- Self-evaluations reports
6- Self-Study repot

Types of KPIs:

B.Sc. Physics program has:

- 22 KPIs (Seventeen principal KPIs from last updated NCAAA KPIs 2019 and five KPIs additional KPI's, and reason for adding these KPI's is to enrich the evidences regarding program quality.
- The operational Plan KPIs.
- Learning outcome indicators.

It is expected that the academic program measures the key performance indicators with benchmarking using the appropriate tools, such as (Surveys, Statistical data, etc.) according to the nature and objective of each indicator, as well as determining the following levels for each indicator:

- ✓ Actual performance
- ✓ Targeted performance level
- ✓ Internal reference (Internal benchmark)
- ✓ External reference (External benchmark)
- ✓ New target performance level

A report describing and analyzing the results of each indicator (including performance changes and comparisons according to sites and gender) is expected with a precise and objective identification of strengths and aspects that need improvement.

The identification of new target benchmark considers the following points;

- If there is large gap between target and actual benchmark, the new target will remain as such or slightly decreased,
- If the target was achieved or about to achieve, the new one will be slightly increased,
- If the target is exceeded, the new one will be stretched to reach or exceed internal and External Benchmark.

For internal benchmark, previous year' data of the Program was used as self-comparison.

Benchmarking:

Benchmarking is a systemic and continuous process for measuring the program performance by comparing it to another program within or outside this university. To identify the causes of the gap and work to address it and reach the best performance Benchmarking is vital processes for maintain high quality of performance of any program. It ensures comparing the performance of various aspects of the program with respect to the good practices recommended by the NCAAA. The Physics program chooses National benchmark which was approved from the college council.

National Benchmarking is chosen based on main criteria:

- Similar in the educational system
- Similar cultural, social and economic conditions

The Importance of Benchmarking:

1. Rationalization of expenditures.
2. Providing continuous learning opportunities.
3. Provide an opportunity for the organization to move - internally and externally - towards better models.
4. Providing cooperation opportunities between local organizations or units.
5. Enabling senior management to answer a set of questions.
6. Adopting an organizational culture aimed at solving problems.
7. Assisting the foundation in precisely defining the gap between its performance and that of the leading institutions in its field of work.
8. It helps to provide the appropriate climate and enhances the desire for leadership of the institution and its employees to adopt a policy of change towards all that is better and new.
9. Help define critical processes, give them the necessary attention and priority in implementation, and actively contribute to developing individual and group creativity.
10. It actively contributes to increasing the chances of achieving additional benefits for the program.

11.The external focus of the benchmarking method creates external competitive measures that necessarily increase the efficiency and effectiveness of internal performance quality measures and makes them more competitive.

For external benchmark, Majmaah University (1440-1441 KPI report) was selected because it was recently being accredited by NCAAA, in addition to its collaboration agreement with the Jouf University to provide the required data for the NCAAA KPIs. Majmaah University is similar to Jouf University in governance, infrastructure and budgetary systems. The Physics program at Majmaah University is similar to the program offered by Jouf University and serve a similar demographic.

Northern Border University (NBU) and Prince Sattam Bin Abdulaziz PSAU were selected for (1442 KPIs report). The Physics program at these Universities is similar to the program offered by Jouf University and serve a similar demographic.

Standard	*Code*	*KPI*	*Description*	*Responsible*	*Date of measuring*	*Measurement tool*
Basic KPIs by NCAAA						
Standard 1						
Mission and Goals	KPI-P- 01	Percentage of achieved indicators of the program operational plan objectives.	Percentage of performance indicators of the strategic plan objectives of the institution that achieved the targeted annual level to the total number of indicators targeted for these objectives in the same year	Annual report and operational plan committee	Annually at the end of academic year	Statistical data and analysis
Standard 3						
Teaching and Learning	KPI-P- 02	Students' Evaluation of quality of learning experience in the program	Average of overall rating of final year students for the quality of learning experience in the program on a five-point scale in an annual survey	Measurement of learning outcomes committee	Annually at the end of academic year	Program evaluation questionnaire
	KPI- P- 03	Students' evaluation of the quality of the courses.	Average students overall rating for the quality of courses on a five-point scale in an annual survey	Third standard	Annually at the end of academic year	Questionnaire
	KPI- P -04	Completion rate.	Proportion of undergraduate students who completed the program in minimum time in each cohort	Academic affairs committee	Annually at the end of academic year	Statistical data and analysis
	KPI- P-05	First-year students retention rate	Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year	Academic affairs committee	Annually at the end of academic year	Statistical data and analysis
	KPI-P - 06	Students' performance in the professional and/or national examinations.	Percentage of students or graduates who were successful in the professional and / or national examinations, or their score average and median (if any)	Alumni Affairs Committee	Annually at the end of academic year	Statistical data and analysis

	KPI- P- 7	Graduates' employability and enrolment in postgraduate programs.	Percentage of graduates from the program who within a year of graduation were: a. employed b. enrolled in postgraduate programs during the first year of their graduation to the total number of graduates in the same year	Alumni Affairs Committee	Annually at the end of academic year	Statistical data and analysis
	KPI- P - 8	Average number of students in the class.	Average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory or clinical session)	Academic Affairs & Schedules and Exams Committee	Annually at the end of academic year	Statistical data and analysis
	KPI- P - 9	Employers' evaluation of the program graduates proficiency.	Average of overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey	Alumni Affairs Committee	Annually at the end of academic year	Questionnaire
Standard 4						
Students	KPI- P-10	Students' satisfaction with the offered services.	Average of students' satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, academic advising, ...) on a five-point scale in an annual survey	Advising academic committee & Sixth Standard	Annually at the end of academic year	Questionnaire
Standard 5						
Teaching staff	KPI- P-11	Ratio of students to teaching staff.	Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program	Fifth standard	Annually at the end of academic year	Statistical data and analysis
	KPI- P-12	Percentage of teaching staff distribution.	Percentage of teaching staff distribution based on: a. Gender b. Branches c. Academic Ranking	Fifth standard	Annually at the end of academic year	Statistical data and analysis
	KPI- P-13	Proportion of teaching staff leaving the program.	Proportion of teaching staff leaving the program annually for reasons other than age retirement to the total number of teaching staff	Fifth standard	Annually at the end of academic year	Statistical data and analysis
	KPI- P-14	Percentage of publications of faculty members.	Percentage of full-time faculty members who published at least one research during the year to total faculty members in the	Scientific research committee	Annually at the end of academic year	Statistical data and analysis

			program			
	KPI- P-15	Rate of published research per faculty member.	The average number of refereed and/or published research per each faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year)	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
	KPI- P-16	Citations rate in refereed journals per faculty member.	The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published)	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
Standard 6						
Learning Resources, Facilities, and Equipment	KPI- P-17	Satisfaction of beneficiaries with the learning resources.	Average of beneficiaries' satisfaction rate with the adequacy and diversity of learning resources (references, journals, databases… etc.) on a five-point scale in an annual survey	Laboratories Committee	Annually at the end of academic year	Statistical data and analysis
Additional KPIs by Jouf University						
	KPI-AP-1	Number of research groups in the program	The total number of the research group that get fund	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
	KPI-AP-2	The number of supported research projects obtained by the program per year	The total number of the funded project	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
	KPI-AP-3	Percentage of students participating in extracurricular activities	Average number of students participating in all extra-curricular activities to The total number of students in the program	Alumni Affairs Committee, Student Activities Committee	Annually at the end of academic year	Statistical data and analysis

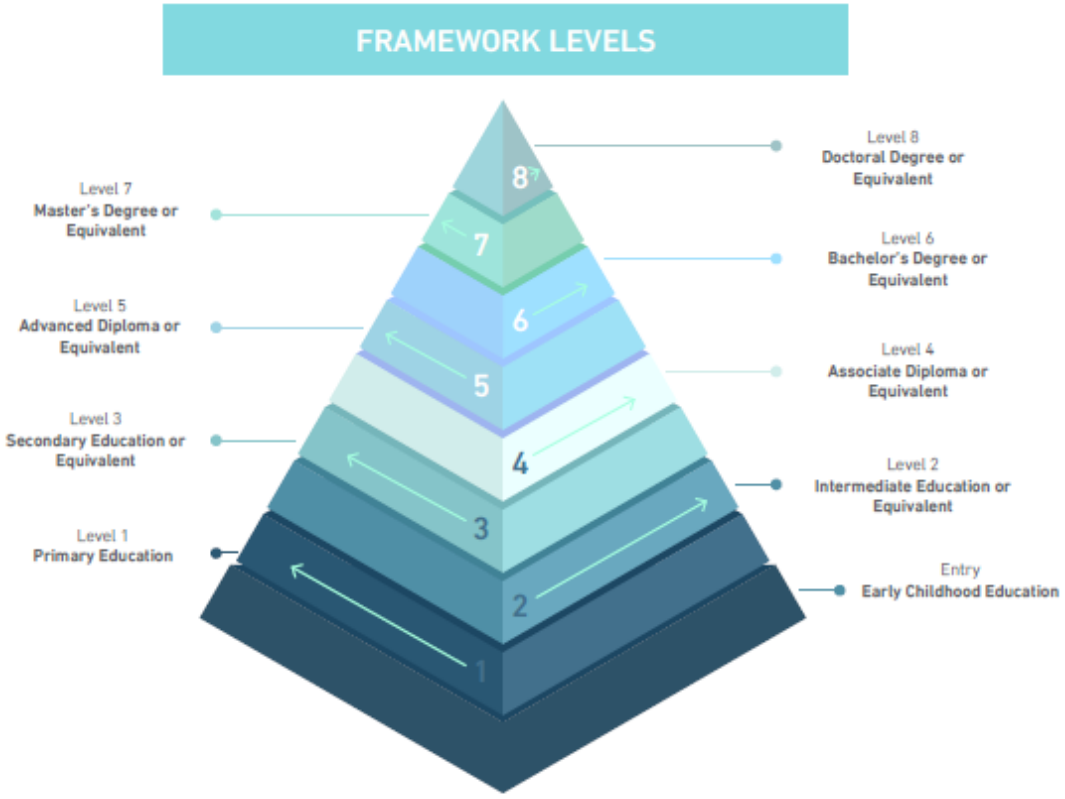
				and Student Forum Committee		
	KPI-AP-4	Employers' satisfaction with the program's target, vision and mission	Average of Employers' satisfaction with the program's target, vision and mission on a five-point scale in an annual survey	First standard	Annually at the end of academic year	Questionnaire
	KPI-AP-5	Percentage of student graduation projects related to the surrounding community	Average community programs and initiatives provided by each academic program during the year (total number of community programs and initiatives provided to total number of academic programs)	Society Services Unit	Annually at the end of academic year	Statistical data and analysis
Operational KPIs						
OP1-01		The percentage of the performance indicators of the objectives of the quality plan verified		Quality Committee	Annually at the end of academic year	Statistical data and analysis
OP1-03		-Percentage of learning outcomes achieved		Quality Committee	Annually at the end of academic year	Statistical data and analysis
OP1-05		Percentage of achieved of the main program performance indicators		Quality Committee	Annually at the end of academic year	Statistical data and analysis
OP1-06		The percentage of fulfilment of the self-assessment criteria		Quality Committee	Annually at the end of academic year	Statistical data and analysis
OP1-07		Self-study completion rate		Quality Committee	Annually at the end of academic year	Statistical data and analysis
OP1-09		Percentage of faculty members who obtained training courses in the field of quality, teaching methods, scientific research and specialization to the total number of faculty members.		Training and development committee	Annually at the end of academic year	Statistical data and analysis

OP1-10	Percentage of the achieved performance indicators of the security, safety and risk management plan objectives	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
OP1-11	Percentage of the applied classroom and extra-curricular activities plan	Quality Committee	Annually at the end of academic year	Statistical data and analysis
OP1-13	Percentage of students participating in training courses	Training and developmen t committee	Annually at the end of academic year	Statistical data and analysis
OP1-15	The Satisfaction of students attending the field training	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
OP1-17	Percentage of verified performance indicators of the community service plan	community service committee	Annually at the end of academic year	Statistical data and analysis
OP1-18	Satisfaction of community members with the community services provided	community service committee	Annually at the end of academic year	Statistical data and analysis
OP1-19	Number of consultations provided	community service committee	Annually at the end of academic year	Statistical data and analysis
OP1-21	Percentage of the program's scientific research plan verified	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
OP1-24	Ratio of faculty members who participated in scientific activities to the total number of faculty members in the program	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
OP1-25	Percentage of students who participated in scientific activities	Scientific research committee	Annually at the end of academic year	Statistical data and analysis
OP1-26	The number of students participating in the activities and events of the Student Forum	Scientific research committee	Annually at the end of academic year	Statistical data and analysis

National Qualifications Framework

The National Qualifications Framework for Saudi Arabia was approved by the Education and Training Evaluation Commission Board of Directors at its first meeting, Second Session, on 10/02/2020

Framework Levels



NQF-KSA Objectives

- **Learning Domains**

The education which a learner needs, including the necessary knowledge, understanding, skills, and values to obtain the relevant qualifications organized according to each level specified in the Framework. These levels progress gradually in terms of scope and sequence, from the entry level to level 8.

They are expressed in terms of the dimensions of knowledge and understanding, skills, and values, autonomy, and responsibility according to the following criteria.

Knowledge and understanding

This includes the knowledge and understanding of a leaner in the areas of learning, work, or profession:

- Extensive deep knowledge and understanding of facts, concepts, principles, theories, processes, and procedures in the area of learning, work, or profession.
- Depth of knowledge which can be general or specialized.
- Breadth of knowledge which can range from a single topic to multi-disciplinary areas of knowledge.
- Kinds of knowledge which range from concrete to abstract segmented to cumulative.
- Complexity of knowledge which refers to a combination of kinds, depth, and breadth of knowledge.

Skills

What a graduate can do in the field of study, work, or profession. Skills are described in terms of the kinds and complexity of skills and include:

- Cognitive Skills: involving the application of knowledge and conceptual understanding of concepts, principles, and theories; and the use of critical thinking, problem-solving skills, inquiry, and creativity.
- Practical and Physical Skills: involving motor skills and manual dexterity, and the use of appropriate materials, devices, and tools, along with mastering motor and manual skills.

- Communication and Information Technology Skills: involving written, verbal, and non-verbal communication, numeracy skills, and the use and production of information and communication technology.

Values, autonomy and responsibility

Terms of principles and standards that is oriented towards success in the areas of life, work, or profession. They include:

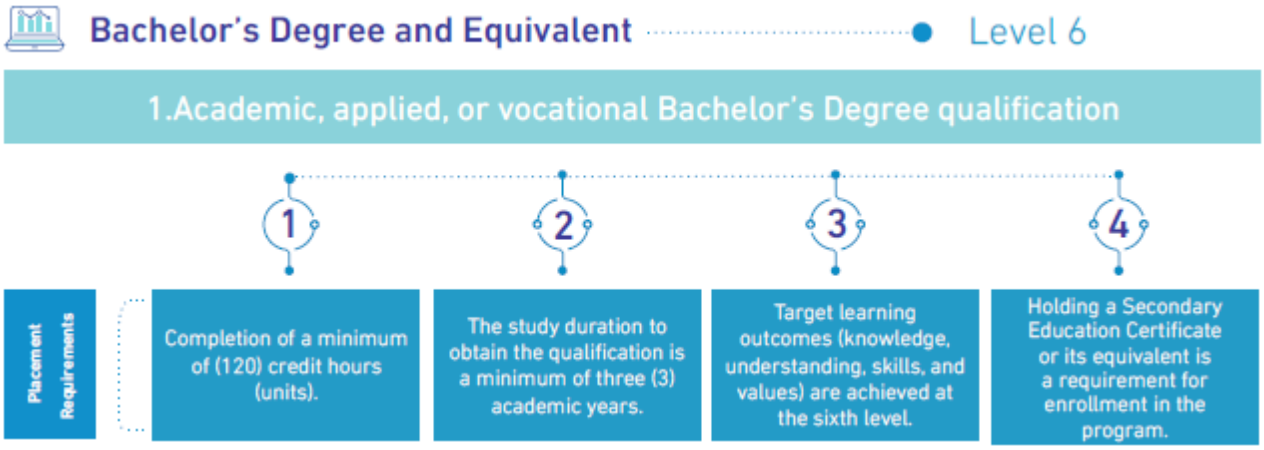
- Academic and professional values and ethics.
- Continued self-learning and autono.
- Teamwork and responsibility.

Level 6 :Bachelor's Degree or Equivalent

The knowledge and understanding, skills, and values, autonomy and responsibility learners are expected to acquire at a specific qualification level resulting in specific learning outcomes.

Bachelor's Degree

This degree is awarded upon the successful completion of a minimum of (120) credit hours (accredited units), usually achieved after spending (3-4) full-time academic years a, or the part-time equivalent in higher education which varies by specialization.



Knowledge and Understanding

The graduate at this level will have:

- Broad in-depth integrated body of knowledge and comprehension of the underlying theories, principles, and concepts in one or more disciplines or field of work,
- In-depth knowledge and comprehension of processes, materials, techniques, practices, conventions, and/or terminology,
- A broad range of specialized knowledge and understanding informed by current developments of a discipline, profession, or field of work,
- Knowledge and comprehension of research and inquiry methodologies.

Skills

The graduate at this level will have a broad range of advanced cognitive, practical and physical, and communication and ICT skills to:

Cognitive Skills

- Apply integrated theories, principles, and concepts in various contexts, related to a discipline, profession, or field of work,
- Solve problems in various complex contexts in one or more disciplines or fields of work,
- Use critical thinking and develop creative solutions to current issues and problems, in various complex contexts, in a discipline, profession or field of work,
- Conduct inquiries, investigations, and research for complex issues and problems

Practical and Physical Skills

- Use and adapt advanced processes, techniques, tools, instruments, and/or materials in dealing with various complex practical activities,
- Carry out various complex practical tasks and procedures related to a discipline, professional practice, or field of work.

Communication and ICT Skills

- Communicate effectively to demonstrate theoretical knowledge comprehension and specialized transfer of knowledge, skills, and complex ideas to a variety of audiences,
- Use mathematical operations and quantitative methods to process data and information in various complex contexts, related to a discipline or field of work,
- Select, use, and adapt various standard and specialized digital technological and ICT tools and applications to process and analyze data and information to support and enhance research and/or projects.

Values, Autonomy and Responsibility

The graduate at this level, within various complex contexts, will:

Values and Ethics

- Demonstrate commitment to professional and academic values, standards, and ethical codes of conduct, and represent responsible citizenship and coexistence with others

Autonomy and Responsibility

- Effectively plan for and achieve academic and/or professional self-development, assess own learning and performance, and autonomously make decisions regarding self-development and/or tasks based on convincing evidences.
- Autonomously and professionally manage tasks and activities related to the discipline and/or work,

- Collaborate responsibly and constructively on leading diverse teams to perform a wide range of tasks while playing a major role in planning and evaluating joint work,
- Actively participate in advancing the discipline and society