SHAQRA UNIVERSITY

COLLEGE OF SCIENCE AND HUMANITIES IN DAWADMI

Quality Assurance Guide
Bachelor of Physics Program

1-Introduction

This comprehensive manual serves as a guiding reference to uphold the highest quality standards across all program activities, procedures, roles, and reporting practices. By following the guidelines presented in this document, we strive to achieve excellence, operational efficiency, and continuous improvement in every aspect of the program. The manual establishes a clear framework to ensure consistency, accountability, and transparency throughout the program's entire lifecycle.

It covers a broad range of key elements related to quality assurance. The manual details the program's core activities—including planning, implementation, monitoring, and evaluation—while providing clear procedures and protocols to support their effective execution. Defined roles and responsibilities are assigned to all stakeholders involved, encouraging collaboration and a results-driven approach. Additionally, the manual sets forth robust reporting mechanisms to monitor progress, identify opportunities for enhancement, and communicate outcomes to relevant parties.

Scope: This manual applies to all individuals involved in the Physics Program, including program managers, staff members, and other relevant stakeholders. It covers all stages of the program, from planning through evaluation and continuous improvement.

2-Physics Program Overview:

The Physics Department belongs to the College of Science and Humanities in Dawadmi, which was established by Royal Decree No. (7305/MB, dated 3/9/1430 AH) with the creation of Shaqra University. This decree stemmed from the Kingdom's government's commitment to advancing public and university education. It should be noted that the college and department were initially established in 1429 AH and were under the umbrella of King Saud University.

3-Program Mission:

To provide outstanding education and produce innovative research that serves society and contributes to its knowledge-based economic development by creating a stimulating environment for learning, creativity, and scientific research, with continuous quality that ensures the optimal use of technology and public partnerships with relevant community institutions in the field of physics.

4-Program Objectives:

- To achieve excellence in higher education, scientific research, and community service.
- To develop methods to ensure the quality of performance and outcomes.
- To optimize the use of modern technologies.
- To provide a stimulating administrative and academic environment.
- To attract the best faculty, staff, and students.
- To establish effective local and international partnerships with universities and relevant community sectors.
- To promote scientific culture and its activities.

5- Program Educational Objectives

- Graduates will apply the fundamentals of physics, along with their analytical, design, and technical skills, to resolve problems in effective and innovative ways .
- Graduates will demonstrate responsibility and professional ethics in their interactions across diverse workplace environments .
- Graduates will effectively collaborate within interdisciplinary teams, assume leadership roles, and communicate clearly and professionally with a variety of stakeholders .
- Graduates will engage in continuous learning and professional development to adapt to advancing technology and evolving career opportunities

6-The program learning outcomes:

Code	Program Learning Outcomes (PLOs)
1	**Knowledge and understanding**
K1	Demonstrate a broad and deep knowledge of the fundamental theories, principles, and concepts across the fields of physics.
K2	Recognize the techniques, materials, practical procedures, and scientific assumptions underlying experimental physics and the use of laboratory equipment and software.
K3	Possess a comprehensive understanding of research methodology, methods of scientific inquiry, and recent developments in the field of physics.
2	**Skills**
S1	Applying knowledge, theories, and physical laws to solve problems in the fields of Physics.
S2	Design experiments in physics, utilizing appropriate instrumentation and statistical methods to evaluate and interpret experimental results in accordance with physical laws and principles.
S3	Analyze and model complex physical systems and phenomena by applying fundamental principles and theories of physics.
S4	Communicate effectively with a range of audience in various ways to demonstrate an understanding of theoretical knowledge, imparting knowledge, specialized skills and complex ideas.
S5	Utilize mathematical tools and digital technology applications, along with computer programs, to describe, model, and analyze physical phenomena.
3	**Values, Autonomy, and Responsibility**
V1	Demonstrate commitment to values, standards, and professional ethics, embodying responsible citizenship, coexisting with others, and actively engaging in the advancement of the community.
V2	Collaborate effectively within a team, taking on roles as a cooperative member or a flexible leader, to foster a collaborative and inclusive environment, establish goals, plan tasks, and achieve objectives.
V3	Develop plans for professional and academic self-improvement in the field of physics, manage activities effectively and independently, evaluate performance, and make evidence-based decisions.

Table 1: The program learning outcomes**.**

7- Graduate Attributes

The physics curriculum at the undergraduate level plays an important role in achieving the general objectives of the stage by providing students with physical information that helps them understand their environment, develop their scientific attitudes, and acquire the practical skills necessary to use the achievements, methods, and technologies of science effectively in serving society, solving its problems, and developing it. These are objectives that ensure the development of scientific culture among members of society, enabling them to actively participate in scientific advancements, keep pace with global technological developments, and benefit from the information revolution. In light of the future role of teachers in general, and physics teachers in particular, it has become essential for physics teachers to possess fundamental competencies. Among the most important of these competencies are the ability to:

- Be familiar with all the laws and principles of physics.
- Integrate practical and theoretical knowledge and analyze physical measurements to draw sound conclusions.
- Identify appropriate tools and techniques that can be used to solve complex problems and find innovative solutions based on their studies.
- Work effectively in a team environment, demonstrate positive leadership and team building skills, and acquire the necessary project management skills.
- The ability to apply mathematical calculations, analyze physical phenomena, and explain them scientifically.
- Understanding the everyday applications of most physical phenomena in our daily lives and how to interpret them.
- Demonstrating personal responsibility towards the profession through participation in community activities related to the profession and developing self-learning skills to enhance the teaching process.
- Commitment to continuous learning for personal development and excellence in professional practice.
- The ability to plan and organize effectively, communicate effectively, work collaboratively, be creative, and demonstrate responsibility.

8-The organizational structure of the Physics Program

The program works with 12 committees, as demonstrated by following visual organizational structure (**Figure 1**).

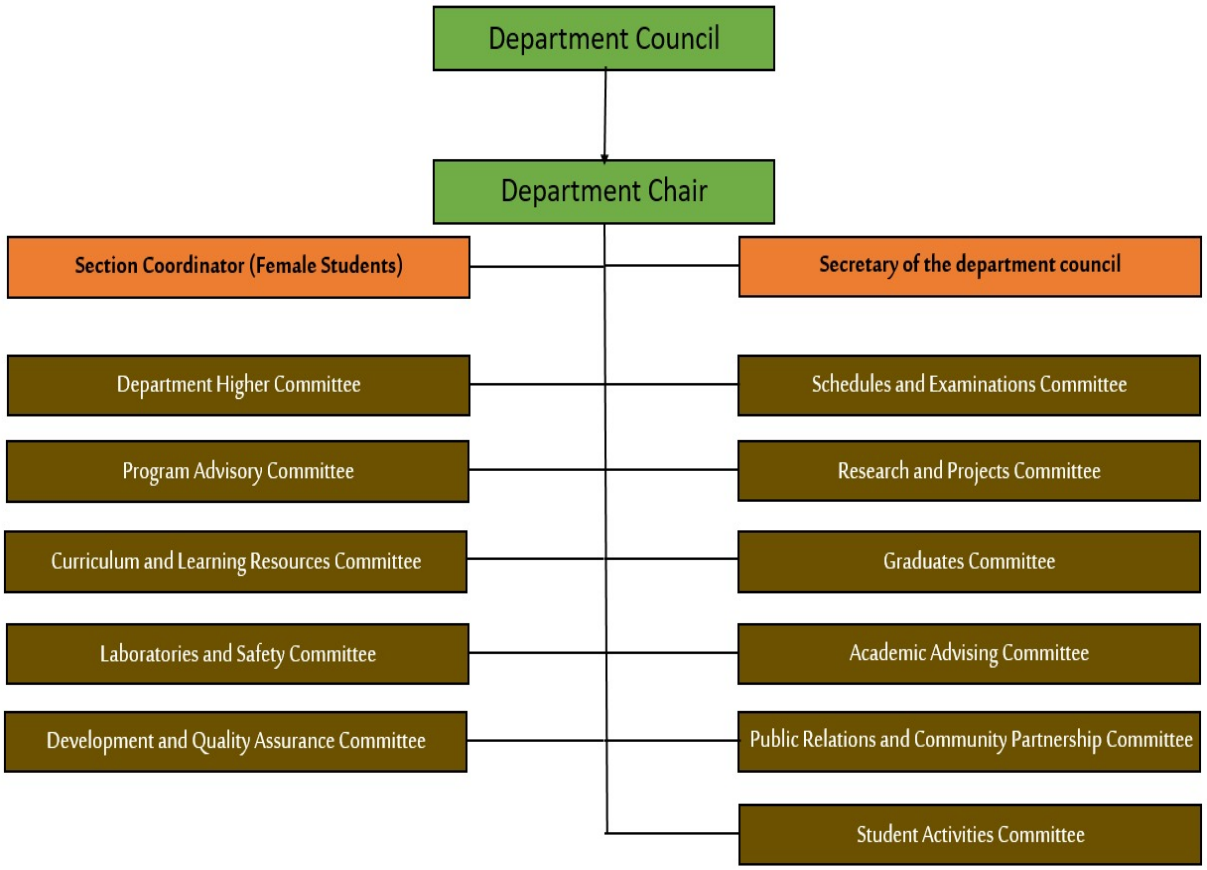

Figure 1: The organizational structure of the Physics Program

9- Program Committees tasks:

9-1 Department Council

The Department Council consists of the faculty members of the department. Each Department Council has its own authority over academic, financial, and administrative matters within the limits of the regulations and bylaws.

- **Council Organization:**

- The Department Council meets at least once a month. A quorum of two-thirds of its members is required for a valid meeting.

- The Head of the Academic Department chairs the Council. Decisions are made by a majority vote of the members present. In the event of a tie, the Chair's vote prevails.
- Council decisions are considered valid unless the Dean of the College objects within fifteen (15) days of receiving the decision. If the Dean objects, the decision is returned to the Department Council with their opinion for further review. If the Council maintains its position, the contested decision is referred to the College Council for a final decision.

- **Duties of the Council Secretary:**

- Scheduling Department Council meetings on a regular basis throughout the academic year, well in advance of College Council meetings.
- Overseeing the preparation of the agenda for Department Council meetings in coordination with the Department Chair.
- Supervising the recording of faculty members' attendance at Department Council meetings, attaching attendance signatures to the meeting minutes, and ensuring a quorum is present before the start of the meeting.
- Supervising the voting process during Department Council meetings.

- **Council Responsibilities:**

- Recommending the appointment, secondment, assignment, and promotion of faculty members, teaching assistants, and lecturers.
- Recommending the approval or amendment of study plans.
- Recommending the approval of programs, curricula, textbooks, and references for the department.
- Encouraging department members to prepare, organize, and publish scientific research.
- Proposing the names of distinguished part-time faculty members with outstanding academic standing to teach and supervise research and theses.
- Proposing and recommending the engagement of specialists, both Saudi and non-Saudi, as adjunct faculty members for a specified period to teach in the department.
- Evaluating the credits of previous courses taken by students transferring to the college, specifically those related to departmental courses.
- Proposing the necessary plans for graduate studies and the admission criteria for the department.
- Reviewing the report submitted on the achievements of faculty members during their sabbatical leave.

- Reviewing matters referred to it by the college council, its chairperson, or its vice-chairpersons for study and opinion.
- Forming permanent or temporary committees from among the faculty members.

9-2 Department Head:

The department head is a faculty member responsible for managing the department's academic, administrative, and financial affairs. They are also responsible for implementing the regulations and bylaws of the Higher Education Council. The department head is appointed from among distinguished Saudi faculty members with proven academic and administrative competence by a decision of the university president, based on a nomination from the college dean. The appointment is for a two-year term, renewable.

- **Reporting:**

The department head reports to the college dean.

- **Scope of Work:**

Supervising the department's operations, chairing its council, forming committees, overseeing coursework and examinations, and evaluating faculty performance.

- **Duties of the Department Head:**

Administrative Affairs:

1- Chairing the Department Council, overseeing its organization, convening its meetings, implementing its decisions, and submitting meeting minutes to the Dean of the College.

2- Achieving the overarching goals and policies of the College and the University.

3- Implementing the College Council's decisions pertaining to the Department.

4- Overseeing the preparation of the Department's strategic plan and monitoring its implementation.

5- Supervising the management of the Department's educational, research, administrative, financial, and cultural affairs.

6- Overseeing the administrative, academic, and research development of the Department.

7- Coordinating and developing the Department's relationships within and outside the University.

8- Overseeing the provision of all the Department's educational, research, administrative, and financial requirements.

9- Overseeing the improvement of quality standards and the development of its outputs.

10- Implementing and monitoring the Department Council's decisions.

11- Performing any other duties delegated by the Dean of the College.

12- Reporting to the Dean of the College all matters pertaining to faculty members and those of equivalent rank at the end of each academic year.

13- Submitting a report on the progress of graduate studies in the department to the Dean of the College at the end of each academic year.

14- Monitoring the status of department members studying abroad on scholarships.

15- Reviewing reports on department members studying abroad on scholarships and presenting them to the department council.

16- Preparing performance evaluation reports for faculty members and department staff.

17- Encouraging department members to develop their skills and conduct scientific research and studies in the department's specializations.

18- Coordinating with the laboratory director regarding department courses.

19- Preparing a comprehensive annual report on the progress of studies, academic, administrative, and research performance in the department and submitting it to the Dean of the College at the end of each academic year.

Education and Training:

1. Submitting a comprehensive report on the scholarship recipient's academic trip, if it is within the Kingdom and under the supervision of the department, and forwarding it to the College Council.
2. Supervising the educational process, implementing its plans, and developing its academic programs within the department.
3. Applying quality systems, regulations, and academic evaluation and accreditation.
4. Supervising various student activities within the department.
5. Supervising the review of final exam questions for department courses and monitoring examination performance.

6. Supervising the academic development process for the department's programs.
7. Supervising the recruitment of faculty members for the department.
8. Proposing a faculty member, other than the course instructor, set the final exam questions for the course when needed.
9. Coordinating with the Vice Dean for Academic Affairs to organize the class schedule to accommodate the courses offered.
10. Coordinating the academic advising process within the department with the Vice Dean for Academic Affairs.
11. Addressing student issues related to department courses and developing solutions.

Powers of the Department Head:

1. Representing the department on the College Council.
2. Recommending that final exam questions be graded by a faculty member other than the course instructor, or that one or more specialists be involved in the grading process.
3. Approving grade reports and exam results.
4. Issuing internal decisions required for the smooth operation of the department, in accordance with regulations and bylaws.
5. Distributing the teaching load among faculty members after approval by the Department Council.
6. Recommending the disbursement of overtime pay to department staff.
7. Recommending the assignment of overtime work to department staff.
8. Recommending the participation of department staff in educational activities and committees within and outside the university.
9. Recommending the attendance of department staff at training courses within and outside the university.
10. Coordinating with the Scholarship and Training Committee to monitor the status of scholarship recipients and trainees.
11. Recommending the termination of contracts for non-Saudi faculty members.
12. Recommending the hiring of new non-Saudi faculty members.
13. Approving the start and end dates of leave for department staff.
14. Recommending the appointment of assistants, researchers, and administrative staff within the department.
15. Chairing the department council and setting its agenda and meeting dates.
16. Forming committees and assigning tasks within the department.

17. Appointing section heads and recommending the appointment of directors for graduate programs within the department.
18. Approving direct purchase requests for the department in accordance with applicable regulations.
19. Recommending the renewal or increase of salaries for contracted faculty members and those working in health and administrative positions within the department.

9.3 Higher Committee of the Department

This committee has been recently created in the department. It is formed by the heads of all committees and is directly chaired by the Head of the Department.

- Supervising the subcommittees and coordinating their work
- Setting the department's general policies in line with the college and university directions
- Supervising the department's strategic plans, monitoring their implementation, and updating them
- Monitoring academic accreditation and quality assurance to ensure the department's compliance with standards
- Overseeing faculty affairs, including appointments, promotions, and professional development
- Submitting recommendations to the College Council regarding departmental affairs

9.4 Scheduling and Exams Committee:

- Preparing the study schedules for each semester in coordination with the Head of Department and Staff.
- Following up on any amendments or updates to the schedules during the semester.
- Submitting the final study schedules for approval by the Department Council.
- Preparing the midterm and final examination schedules.
- Coordinating with Staff to ensure the submission of exam questions within the specified deadlines.
- Supervising the process of printing and securely storing examination papers.
- Following up on the organization of invigilation committees and the distribution of proctors in examination halls.

- Documenting reports on the progress of examinations and submitting them to the Department or College administration.
- Recording the names of students absent from the final exam and collecting their excuses.

9.5 Academic Advising Committee:

- Monitoring the distribution of academic advisors to students.
- Ensuring that Staff fulfill their roles as academic advisors.
- Raising students' awareness of academic regulations and policies (e.g., course withdrawal, postponement, transfer, academic probation, etc.).
- Assisting students in selecting courses that align with their study plans.
- Providing support to academically struggling students and developing remedial plans for them.
- Receiving students and responding to their academic inquiries.
- Organizing orientation sessions for new students regarding the study plan and academic pathways.
- Submitting reports on students' academic performance to the department.
- Proposing programs or workshops to enhance students' learning skills.
- Coordinating with the Academic Advising Unit at the college or the Deanship of Admission and Registration.
- Contributing to the preparation of quality and accreditation reports related to academic advising.

9.6 Scientific Research and project Committee:

- Promoting the culture of scientific research and its ethics.
- Monitoring research projects of Staff and students.
- Assisting in directing research in line with the priorities of the department, college, and university.
- Organizing workshops on research writing and scientific publication mechanisms.
- Following up on the progress of research projects funded internally or externally.
- Contributing to transforming research into products or initiatives that serve the community and labor market.
- Documenting research outputs and projects in accordance with quality and academic accreditation requirements.

- Submitting periodic reports on research and project achievements to the department.

9.7 Laboratories and Safety Committee:

- Supervising the readiness of laboratories in terms of equipment, tools, and materials.
- Monitoring the implementation of safety instructions and procedures inside laboratories.
- Organizing awareness and training programs for Staff, students, and technicians on safety regulations.
- Ensuring the availability of first aid kits and fire-fighting equipment.
- Following up on the regular maintenance and renewal of laboratory equipment and materials.
- Overseeing the proper disposal of chemical and biological waste.
- Preparing periodic reports on the status of laboratories and safety and submitting them to the department or college.
- Contributing to the development of a safe and healthy working environment inside laboratories.

9.8 Alumni committee:

This committee has been created in the beginning of the academic year 2024-2025.

- Establish and maintain an updated database to communicate with alumni and monitor their professional and academic career paths after graduation.
- Develop and administer periodic surveys to assess the satisfaction of graduates and employers with the program's outcomes.
- Organize regular meetings and forums for alumni to strengthen their connection with the college and current students, and encourage their contribution to academic and professional development.
- Utilize alumni feedback and professional experiences to improve curricula and develop courses in alignment with labor market requirements.

9.9 Development and Quality Assurance Committee:

- Monitoring and updating course and program specifications and reports.
- Overseeing the implementation of quality standards at the department level.

- Following up on the implementation of improvement plans resulting from internal and external evaluations.
- Preparing and executing improvement plans and periodically assessing their impact.
- Organizing workshops and training courses for Staff and students in the fields of quality and development.
- Conducting benchmarking studies with similar programs and departments locally and internationally.
- Contributing to the development of the department's strategic and operational plans.
- Submitting periodic reports to the Head of Department on quality and development achievements.

9.10 Program Advisory Committee:

This committee has been created in the beginning of the academic year 2025-2026

- Reviewing and developing the study plan.
- Enhancing alignment with labor market needs.
- Providing advice on research and labor market issues.
- Supporting accreditation and community service.

9.11 Student Activities Committee:

- Developing an annual plan for student activities in the department and implementing it.
- Organizing cultural, scientific, sports, and social events for students.
- Encouraging students to participate in internal and external activities.
- Identifying students' talents and developing their skills through various activities.
- Promoting a sense of belonging, initiative, and teamwork among students.
- Coordinating with the college's Student Activities Unit to support joint events.
- Preparing periodic reports on student activities and submitting them to the Head of Department.

9.12 Study Plans and Learning Resources Committee:

This committee has been created in the beginning of the academic year 2025-2026.

- Preparing and reviewing the study plans for academic programs in accordance with college and university standards

- Reviewing course descriptions and ensuring their alignment with the program's learning outcomes
- Monitoring the quality of prescribed and utilized learning resources in the courses
- Coordinating with Staff to ensure the effective implementation of study plans
- Preparing periodic reports on the status of study plans and learning resources and submitting them to the Department Council.

9.13 Public Relations and Community Partnership Committee:

This committee has been created in the beginning of the academic year 2025-26.

- Identifying the needs of the local community and developing plans and programs to serve it in line with the department's specialization
- Organizing and implementing community programs and initiatives in collaboration with local authorities, educational institutions, and community organizations
- Developing partnerships with government and private sectors to serve the community and leverage academic resources
- Encouraging Staff and students to actively participate in community service activities
- Monitoring and evaluating the impact of community service programs to ensure the achievement of objectives and performance improvement
- Preparing periodic reports on community service activities and submitting them to the Department and College Councils.

10. Quality System

10.1 Development and quality management goals:

The quality assurance management system is designed to achieve the following key objectives:

- To promote and uphold best practices in quality assurance processes.
- To ensure continuous improvement of the Program.
- To ensure the delivery of high-quality outcomes.

10.2 Close Quality Loop cycle:

Closing the quality loop involves a structured set of steps designed to address feedback and enhance the overall quality of a program. The process includes the following:

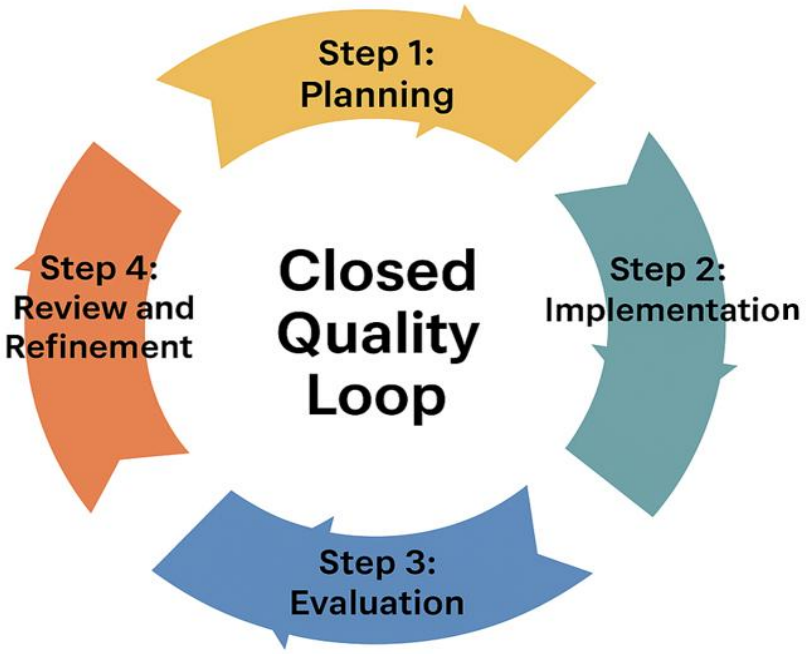

Figure 2: Closed Quality Loop

Step 1: Planning

1. **Gather Feedback:**

The first phase focuses on collecting feedback from key stakeholders, including students, faculty, employers, and other relevant groups. This input may be obtained through surveys, focus groups, interviews, or other suitable data-collection methods.

2. **Analyze Feedback:**

After gathering the information, a thorough analysis is conducted. This includes categorizing responses, identifying recurring themes, and highlighting strengths, weaknesses, and areas requiring improvement. The purpose is to develop a clear and comprehensive understanding of the feedback.

3. **Identify Improvement Points:**

Based on the analysis, specific areas in need of enhancement are identified. These may relate to curriculum design, teaching approaches, learning resources, student support services, or any other component of the program.

4. **Develop an Action Plan:**

Once improvement areas are determined, a detailed action plan is created. This plan outlines the strategies, steps, and resources required to address the identified issues. It should follow the SMART criteria—being Specific, Measurable, Achievable, Relevant, and Time-bound—to support effective implementation.

Step 2: Implementation

Execute Changes: This phase involves putting the approved action plan into practice. Specific activities may include updating the curriculum, offering professional development for instructors, upgrading facilities and resources, or expanding student support programs. Execution should be coordinated and carefully overseen to ensure alignment with the plan's objectives.

Step 3: Evaluation

Assess Impact: Continuously monitoring and evaluating the effectiveness of the changes is critical. This ongoing assessment determines whether the interventions are producing the intended results. Evaluation methods can include tracking key performance indicators, gathering and analyzing student feedback, and reviewing relevant data sets.

Step 4: Review and Refinement

Iterate and Optimize: Informed by the evaluation data, the implemented strategies should be refined and adjusted. This crucial step involves fine-tuning the changes to ensure they remain effective and aligned with the program's evolving goals and stakeholder needs, requiring an agile and responsive approach.

By systematically following this cycle, the quality assurance loop is completed. This ensures feedback is actively addressed, leading to tangible enhancements and an overall elevation in program quality. This iterative cycle fosters a culture of continuous improvement, enabling the program to dynamically adapt and excel in a changing environment.

A Critical Success Factor for Continuous Development:

Communication and Engagement: Maintaining clear and consistent communication with all stakeholders is vital throughout the process. It is necessary to regularly inform students, faculty, and other relevant parties about the progress, implemented changes, and achieved outcomes. This practice not only keeps everyone informed but also fosters a greater sense of inclusion and collaborative partnership by actively involving them.

11- Quality System in the College

The quality system in the college relies on a set of procedures and regulations aimed at:

- Promoting a culture of quality and academic accreditation among all members of the college.

- Monitoring the implementation of quality plans and achieving academic accreditation standards.
- Ensuring the development of academic programs to meet labor market requirements.
- Supporting scientific research and community service in line with the college's and university's vision and mission.
- Ensuring continuous improvement in academic and administrative performance through regular evaluations and report submissions.

12- Quality Assurance Policy at the University

Since its establishment, Shaqra University has focused on affirming, guaranteeing, and enhancing quality as one of the pillars of the university's strategic framework. This is evident in the following:

- Spreading a culture of quality and academic accreditation at all levels and areas.
- Implementing specialized courses and workshops to enhance quality practices.
- Supporting initiatives of the strategic plan.
- Developing self-assessment plans at both institutional and program levels and overseeing their implementation.
- Creating a roadmap towards achieving quality assurance and academic accreditation standards.
- Monitoring teaching and learning processes, ensuring their quality, reviewing, and continuously improving them.
- Providing support, assistance, and consultations to academic and administrative units in applying quality.
- Employing information technology and electronic systems to enhance quality practices.
- Involving stakeholders in developmental and continuous improvement processes.
- Analyzing internal performance indicators to meet academic accreditation standards.
- Regularly monitoring operations and reports and comparing them against quality standards.

- Motivating committees and units to excel in applying quality.
- Preparing continuous improvement plans for educational, research, and administrative activities.
- Providing necessary information to decision-makers regarding quality and accreditation.

13- Methodology of the Quality Management System at the University

The Quality Management System at Shaqra University operates at two levels:

1. Institutional Level (the University as a Whole):
    - The university adopts the Deming Model for Total Quality Management due to its effectiveness and ease of understanding and implementation.
    - This model relies on a dynamic cycle of continuous improvement, where each stage ends to begin another.
    - The essence of the model is the continuous improvement of processes and systems according to quality methodology.
2. Organizational Unit Level (Colleges and Programs):
    - The same methodology is applied while considering the uniqueness of each college or program.
    - The system ensures performance monitoring, self-assessment, and compliance with academic accreditation requirements.

14- Tasks of the Quality Assurance Committee at the University

- Coordinating with various college programs regarding the implementation of self-assessment and the completion of accreditation requirements.
- Contributing to proposing necessary recommendations to ensure quality at the university level.
- Preparing and implementing improvement plans and following up on compliance with academic accreditation standards.

- Participating in the review of performance evaluations for different programs and colleges.
- Reviewing the executive plans of programs and colleges.
- Proposing mechanisms to motivate and encourage excellence in quality application and accreditation.
- Submitting follow-up reports on the progress of academic and program accreditation to the Supreme Committee for Quality and Accreditation.
- Continuous coordination and integration with the Deanship of Quality and Academic Accreditation and related committees.

15- Quality System in program

15.1 Development and Quality Assurance Committee construction

The Physics Program adopts a comprehensive and robust quality system designed to ensure excellence across all components of the program. **The Development and Quality Assurance Committee** is responsible for applying the Quality system in the program. It consists of three subcommittees. These subcommittees are: Strategic planning committee, Academic Accreditation Committee, and program learning outcomes assessment and review committee. **Figure. 3** illustrates the construction of the Development and Quality Assurance Committee in the program.

Figure 3: Construction of Development and Quality Assurance Committee

1- Strategic planning committee

- Preparing the annual operational plan for the program in light of the college's operational plan.
- Monitoring the implementation of the program's operational plan and coordinating with relevant committees.
- Inputting the plan and its evidence into the electronic system.

- Calculating performance indicators and monitoring them periodically.
- Preparing the final report for the operational plan.
- Developing improvement plans based on performance results.

2- Academic Accreditation Committee

- Preparing and writing the self-study report for the program, gathering evidence, and identifying strengths, weaknesses, and priorities for improvement.
- Preparing self-assessment evaluation scales for the program.
- Preparing the self-study report.
- Organizing evidence and documentation (both paper and electronic) and reviewing it.
- Submitting reports to the department council.
- Collecting annual data from various units.
- Reviewing information and statistics in collaboration with the statistics unit.
- Presenting data in appropriate templates according to the authority's guidelines.

3- Program learning outcomes assessment and review committee

- Formulating and updating the learning outcomes for the program. Ensuring that the learning outcomes are aligned with the mission and objectives of the program and the institution, as well as with labor market expectations after graduation.
- Developing a plan for measuring the learning outcomes of the program.
- Evaluating the learning outcomes to determine whether students have acquired the knowledge, skills, and values necessary upon graduation from the program.
- Identifying the most appropriate assessment methods and tools for each learning outcome.
- Obtaining accurate, credible, and useful information about student learning in the program specialization, with the aim of using this information to improve program performance and develop improvement plans.
- The assessment of learning outcomes serves as a documented means to measure the effectiveness of the programs.
- Preparing a report on measuring the learning outcomes for the program.

The Physics Program utilizes a diverse range of assessment methods to holistically evaluate student learning and provide actionable feedback for continuous improvement. Furthermore, the program's quality system incorporates a rigorous evaluation cycle. This enables the program to consistently gauge its effectiveness, base decisions on concrete data, and implement targeted enhancements to align with both evolving student needs and industry requirements.

15.2 Physics Program Development Processes

(1) Program Level review:

The Physics program maintains a robust, multi-cycle review process to ensure continuous quality improvement and academic excellence. This systematic approach operates on two interconnected tiers: an Annual Program Review (APR) for routine monitoring and tactical adjustments, and a comprehensive Five-Year Program Review for strategic evaluation and long-term planning. As illustrated in **Figure 4**: The Program Assessment Process, this model creates a closed feedback loop where data-driven insights from annual cycles inform the deeper, strategic analysis of the quinquennial review, fostering a culture of sustained advancement.

Figure 4: The Program Assessment Process

(2) Annual review Cycle:

The Annual Program Review Cycle commences with the systematic collection of data utilizing standardized University of Shaqra templates. These include course reports, surveys distributed to students, graduates, faculty members, and administrative staff, as well as feedback from relevant professional bodies.

Following data collection, comprehensive analysis is conducted. The findings, along with corresponding action plans and key performance indicators (KPIs), are formally documented in the Annual Program Report.

At the conclusion of the academic year, the Head of Department (HOD) submits this report to the Vice Dean for Development and Quality. This office is tasked with reviewing the report to ensure its completeness and adherence to the quality standards mandated by both the University of Shaqra and the National Commission for Academic Accreditation and Assessment (NCAAA).

Subsequently, the Physics Program assumes responsibility for executing the approved improvement plans to drive continuous quality enhancement.

(3) Minor Program Modifications:

Continuous improvement is facilitated through minor program modifications, which encompass changes to names, contact information, addresses, examination procedures, and timing. The responsibility for managing these modifications lies with the Head of Department (HOD) in conjunction with the Program and Study Plans Committee. Following approval, notification of minor modifications is disseminated to all stakeholders through the departmental website.

(4) Major Program Modifications:

Major modifications constitute substantial revisions to admission or program requirements, curriculum, learning outcomes, and/or delivery mode. Proposals for such changes must include a clearly articulated rationale. Approval for all major modifications is contingent upon a recommendation from the University Academic Plans and Programs Management. To ensure alignment with university and National Qualifications Framework (NQF) policies, the Department's Curriculum and Learning Resources Committee adheres to the official templates, documents, instructions, and guidelines for program modifications, which are published on the University Academic Plans and Programs Management website.

Table 2 present the program evaluation matrix and **Table 3** shows the roles of faculty members, students in planning, quality assurance and decision making.

Table 2: Quality assurance procedures at the course and program levels.

Activity	End of term	Annually	Responsibility
Course evaluation survey	√		Course coordinators
Post-Term meeting	√		Course coordinators
Course report (CR)	√		Course instructors + Course coordinators
Course file submission	√		Course coordinators
Students experience survey		√	MEWG
Program evaluation survey		√	MEWG
Faculty members satisfaction survey		√	MEWG
Employers' evaluation survey		√	HOD+MEWG
Academic advising survey		√	Academic advising committee
Operational plan report		√	OPWG
Program KPI report		√	KPIWG
Annual program report (APR)		√	APRWG
Annual program report revision		√	Deanship of Development and quality
Approval of the APR and CR		√	FOS council
Action plan preparation & distribution		√	DQC
Action plan execution & assessment		√	DQC

Table 3: Time frame of program evolution.

Activity	Monthly	Beginning of the term	End of the term	Annually	Every 5 years
Committees' meetings	√				
Departmental council meeting	√				
Faculty council meeting	√				
Pre-Term coordinators meeting		√			
Course file		√	√		
Course evaluation survey			√		
Course report		√	√		
Post-Term coordinators meeting			√		
Facilities and resources assessment				√	
Faculty training programs				√	
Surveys				√	
Program KPI report				√	
Operational plan report				√	
Stakeholders' surveys report				√	
PLOs assessment report				√	
Annual program report				√	

CR and APR revision by internal reviewers				√	
Improvement plans distribution Action plan execution Action plan report				√	
Advisory committee meetings				√	
Independent program review (SSRP)					√
Review of program and course specifications, learning outcomes and study plan				√ (Internal review for minor change)	√ (External review for major changes)
Review of mission, graduates' attributes and operational plan					√
SWOT analysis report					√
Self-evaluation scales report				√	√
Self-study report (SSRP)					√

15.3 Curriculum-Level Review and Development

The curriculum outlines the core educational components for all courses within the program, including instructional materials, learning activities, and assessment methods. The Physics Program curriculum is systematically designed and continuously refined based on the following key considerations:

University Standards: Adherence to Shaqra University's policies and procedures.

Program Objectives: Alignment with the program's mission, goals, and intended learning outcomes.

Stakeholder Needs: Responsiveness to student needs and the requirements of the local community.

Professional Standards: Fulfillment of standards set by relevant academic and professional bodies.

The curriculum development process for the Physics Program follows four major phases:

(1) Phase 1: Planning and Analysis

In this foundational phase, Curriculum and Learning Resources Committee conducts comprehensive research to inform curriculum design. This involves collecting and analyzing data across three critical areas:

i. **Educational Context & Trends:** Analyzing local and national trends in Physics education to identify key challenges and opportunities. This ensures the curriculum is

responsive and relevant to student needs, community expectations, and professional standards.

ii. **Resource Availability:** Assessing the resources (e.g., facilities, technology, personnel) required for effective curriculum implementation.

iii. **Governing Frameworks:** Reviewing all applicable policies and guidelines from the Faculty, University, and national education and accreditation bodies.

iv. **Data Sources** include academic materials (exam papers, assignments, lecture notes, textbooks) and stakeholder feedback gathered through surveys targeting students, faculty, professional bodies, and the local community.

The insights generated in this phase directly guide and shape the subsequent curriculum development process.

(2) Phase 2: Design and Development

In this phase, the Curriculum and Learning Resources Committee translates analysis into actionable design. Based on the findings from Phase 1, the committee makes definitive decisions regarding the curriculum's core components:

i. **Program Learning Outcomes:** Defining the specific knowledge, skills, and competencies students must achieve by the end of the program.

ii. **Curriculum Content:** Selecting and organizing the core subject matter, instructional materials, and resources required to facilitate effective learning.

iii. **Learning Experiences:** Designing the activities, assignments, and pedagogical strategies that will actively engage students and reinforce learning.

iv. **Scope and Sequence:** Structuring the order and progression of learning experiences to ensure logical development and instructional effectiveness.

Decisions regarding curriculum goals and outcomes are guided by four key considerations:

- *The Subject Matter:* The core principles and evolving knowledge within the field of Physics.
- *National Standards:* Alignment with national educational policies and accreditation standards.
- *Learner Needs:* The identified academic and developmental needs of the student body.
- *Community Needs:* The requirements and expectations of the local and professional community.

All design decisions and specifications from this phase are formally documented in the **Physics Program Specification** and individual **Course Specifications**, utilizing the official templates provided by the NCAAA (National Commission for Academic Assessment & Accreditation).

Curriculum Structure and Flow: The Physics Department offers a comprehensive range of courses in both pure and applied physics, catering to its majors and students from other disciplines. To facilitate academic planning, a **Program Prerequisite Flowchart** has been developed. This visual tool assists students and faculty advisors in mapping a clear and efficient path toward graduation at Shaqra University.

Monitoring for Continuous Improvement: Systematic monitoring of curriculum implementation is essential to verify that intended goals are being met and that the program effectively serves the needs of students and stakeholders. Through this ongoing process, the Physics Program can pinpoint areas for enhancement and implement timely adjustments, ensuring the curriculum remains effective and aligned with its targeted learning outcomes.

Course Coordination and Management: To ensure quality and consistency, the Physics Program assigns a dedicated **Course Coordinator** for every course within the curriculum. The coordinator is responsible for the planning, development, and overall management of their specific course, acting as the central liaison for faculty, students, and administrators. Their primary role is to foster an optimal learning environment that promotes student success and the achievement of program outcomes.

(3) Phase 3: Implementation and Monitoring

This phase commences upon receiving final approval from the designated higher authority. The **Course Coordinator** is central to this stage, entrusted with ensuring the effective delivery and quality of their assigned course.

Primary Responsibilities of the Course Coordinator:

i. **Curriculum Stewardship:** Collaborating with faculty and subject matter experts to develop, review, and update course curriculum in line with program goals.
ii. **Logistical Coordination:** Managing the course schedule, determining term offerings, and securing essential resources (e.g., classrooms, lab equipment, instructional materials).

iii. **Instructional Design Support:** Assisting instructors in developing aligned instructional materials, learning resources, and assessment tools that enhance the student learning experience.

iv. **Faculty Support & Alignment:** Supporting teaching faculty by providing guidance on pedagogical strategies, assessment methods, and classroom management. Facilitating communication among instructors to ensure consistency and high standards in course delivery.

v. **Quality Assurance:** Continuously monitoring and evaluating course effectiveness through student feedback, course evaluations, and analysis of student performance data.

vi. **Reporting and Communication:** Preparing and disseminating a comprehensive **Combined Course Report** that summarizes course progress, highlights achievements, identifies challenges, and outlines action plans for continuous improvement to all relevant stakeholders.

(4) Phase 4: Evaluation and Reporting

This final phase focuses on systematic evaluation and strategic reporting to close the quality assurance loop. Course Coordinators are responsible for synthesizing and presenting comprehensive evaluation data to two key governing bodies:

-The Curriculum and Learning Resources Committee.

-The Development and Quality Assurance Committee.

A central component of this phase is the mandatory Term-End Departmental Meeting. This forum facilitates a thorough review of all courses, examining:

- The effectiveness of teaching strategies and instructional delivery.
- Analysis of student results and the achievement of intended learning outcomes.
- Action plans for improvement based on identified gaps.
- Consolidated feedback from students and other stakeholders.

Based on the evidence presented in course reports and stakeholder feedback, targeted Action Plans are developed. These plans prescribe necessary adjustments to curriculum implementation, which may include:

- Modifying teaching methodologies.
- Revising learning materials and resources.
- Adapting assessment methods and tools.

The ratified action plans formally conclude the evaluation cycle and authorize specific improvements for the subsequent academic period, ensuring the curriculum remains dynamic, effective, and responsive.

It is important to note that any adjustments or modifications to program components must follow the approval authority matrix outlined in **Table 4**.

Table 4: The approval levels of modifications that take place within the Shaqra University

Scheduled curriculum updates	The responsible department/unit
Program Level	
Changes including a program's mission, objectives, title, program length (total number of years/levels/ hours), program learning outcomes, program specification, study plan, and adding co-requisites or prerequisites	Shaqra University Standing committee of programs and study plans
Changes in ordering of PLOs, program KPIs, course code	Shaqra University Management of Programs and study plans
Change in the facilities, operational plan, dropping program co-requisites or pre-requisites	Faculty Council
Course Level	
Changes in the title, credit hours, length of period for teaching, timing in the program plan, update of course specification affecting >25% of CLOs, language of teaching	Standing committee of programs and study plans at Shaqra University
Course code	Management of Programs and study plans at Shaqra University.
Changes in course policies and regulations	Faculty Council
Course teaching strategies, < 25% change in CLOs, textbooks, reference materials, updates in medical knowledge in related topics, distribution of topics/weeks, methods for assessment; measurement and evaluation grading systems.	Department Council

15.4 Modifying and revising the vision, mission, and objectives

Figure 5 illustrates a review cycle conducted every 3–5 years, comprising the following stages:

1. ***Data Collection and Comparison:***

The Department's Evaluation and Accreditation Committee:

- Conducts surveys of students, faculty members, alumni, and employers.
- Selects three similar programs for comparison.

2. ***Data Analysis:***

In the first stage, the Department's Evaluation and Accreditation Committee analyzes the information gathered from the surveys and comparisons, identifying strengths and weaknesses.

3. ***Developing or Updating the Vision, Mission, and Objectives:***
   - Formulates or improves the program's vision, mission, and objectives.
   - Prepares an improvement and development report.

4. ***Submitting Proposals to Relevant Committees:***
   - Presents the proposal to the program's advisory committee.
   - Submits the vision, mission, and objectives to the Department Council for approval.
   - Subsequently, the College Council approves the proposal.

5. ***University Approval:***

After College approval, the proposal is submitted to the University Council for final approval.

6. ***Implementation:***

Implementing the updated vision, mission, and objectives, and developing the program's strategic and operational plan accordingly.

7. ***Review and Update***

Reviewing the learning outcomes and ensuring their alignment with the new vision, mission, and objectives.

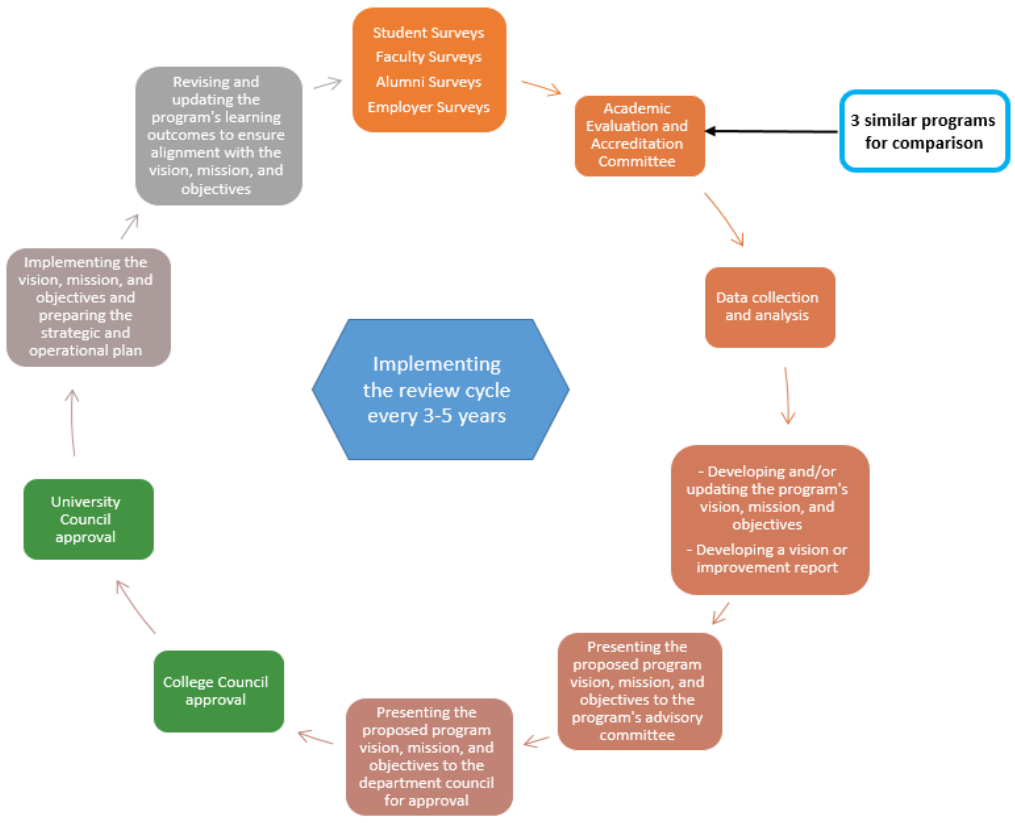

Figure 5: Steps for modifying and revising the vision, mission, and objectives

15.5 Reviewing and updating the program's learning outcomes

The process of updating learning outcomes is based on four main sources:

- Specialized academic standards
- The National Qualifications Framework.
- Program objectives.
- Labor market requirements.

The process includes the following stages:

1. ***Data collection from stakeholders:***
   - Student and faculty surveys.
   - Graduate and employer surveys.
   - This data is submitted to the Learning Outcomes Measurement Committee.
2. ***Initial concept development:***

The Learning Outcomes Measurement Committee updates and develops the learning outcomes and formulates an initial concept.

3. ***Presentation of the initial concept to the program advisory committee:***

The initial draft is submitted to the advisory committee to obtain their feedback and recommendations.

4. ***Approval by the department council:***

After making the necessary revisions, the final learning outcomes are approved by the department council.

5. ***Alignment of learning outcomes with courses:***
   - Updating the learning outcomes for each course.
   - Ensuring their consistency with the overall program learning outcomes.

The department periodically, every 3–5 years, revises and continuously updates learning outcomes to ensure they are aligned with changes in future academic standards and labor market requirements.

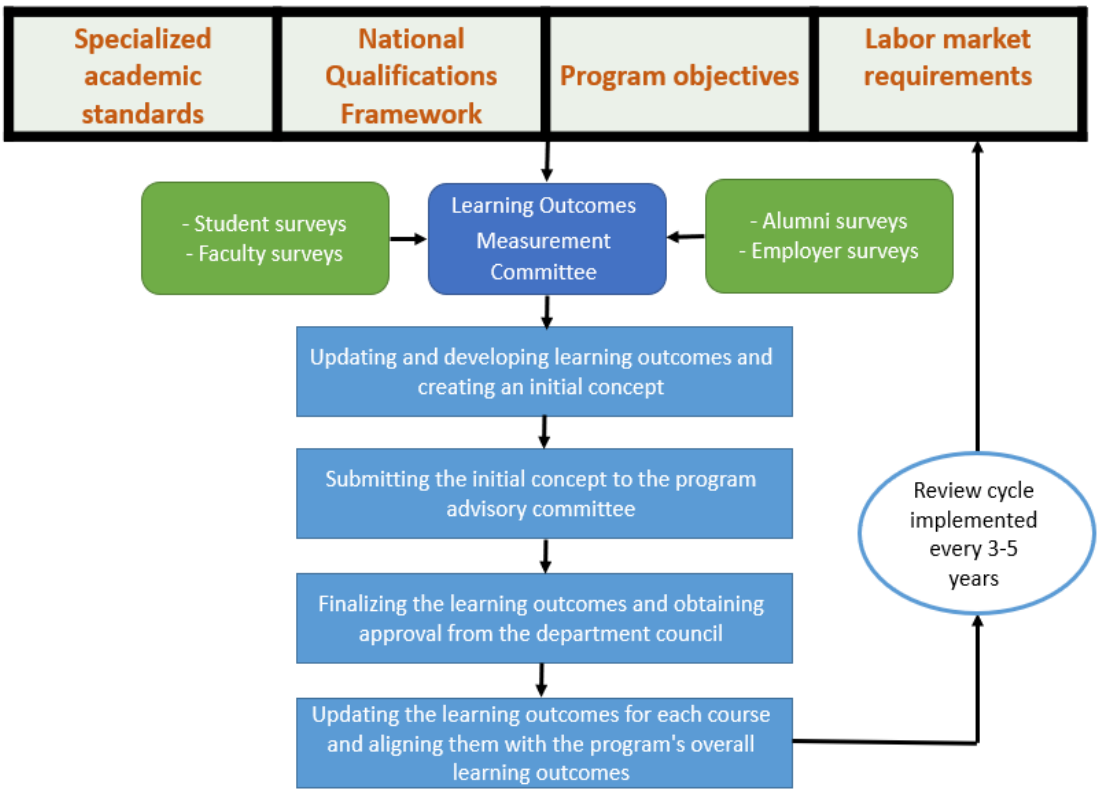

Figure 6: Steps for reviewing and updating the program's learning outcomes

Learning Outcomes Assessment Plan (1446 H)

The National Center for Assessment and Accreditation has established the National Qualifications Framework (NQF) to guide educational institutions and academic programs in formulating learning outcomes for programs and courses in alignment with this framework. The learning outcomes are categorized into three main domains:

- Knowledge
- Skills
- Competencies (according to the 2023 SAQF release), or
- Knowledge, Skills, and Values (according to the 2023 NQF release

The National Authority for Quality Assurance and Accreditation defines learning outcomes as statements describing what a student should know, be able to do, and is expected to accomplish by the end of a course or educational program. Assessing learning outcomes is a fundamental component of any educational system, enabling judgments about the extent to which students have acquired the intended outcomes. It also highlights strengths and areas for improvement.

The process of assessing learning outcomes aims to obtain accurate, credible, and useful information about the extent of student learning in the Physics program. It also aims to use this information to improve the program's performance. Key reasons include:

- Ensuring local community and labor market expectations are met.
- Meeting national academic accreditation requirements.
- Providing documented evidence of program effectiveness.
- Supporting the mission and strategic goals of the university, college, and program.
- Developing program improvement plans.

Table 5: Timeline for Measuring Learning Outcomes Plan

No.	Procedure	Responsibility	Timeframe
1	**Identifying Learning Outcomes and Appropriate Assessment Methods at the Course and Program Levels**		
1.1	Formulation and approval of learning outcomes for each course according to the course topics and activities listed in the course specifications..	Development & Quality Committee / Self-Study Committee	Beginning of academic year
1.2	Linking the learning outcomes of each course to the Program Learning Outcomes (PLOs) that have been formulated and approved to meet the National Qualifications Framework standards.		
1.3	Classification of the study plan by courses and clarification of each course's contribution to the Program Learning Outcomes.		
1.4	A set of teaching and assessment strategies are identified for each learning outcome in every course. All formulated learning outcomes and their associated teaching and assessment strategies are listed in the course specification file.		
1.5	The specified assessment strategies are used during the semester to evaluate students' performance across various learning outcomes.		
2	**Collecting and Analyzing Assessment Results at the Course and Program Levels**		
2.1	Tabulating students' averages for each learning outcome and compiling them in Excel files prepared and designed by the Program's Development and Quality Committee to assist faculty members in the tabulation and compilation process. The learning outcome values must be calculated for sections of the same course in the academic year.	Faculty Members	End of each semester
2.2	The averages of all learning outcomes for each course are recorded in the course report file. Program Learning Outcomes averages are calculated as the overall averages across all relevant course learning outcomes. In addition, the course faculty member proposes improvement actions related to learning outcomes that did not achieve the target score, and these are listed at the end of the course report. The	Development & Quality Committee	End of academic year

	target score for each learning outcome is equal to 70% of the total marks allocated to that learning outcome.		
2.3	At the program level, students' averages in each Program Learning Outcome are calculated as the overall achievement rates across all relevant courses compiled from the course reports, and the final result is recorded in the annual program report file. This is considered a direct measurement method for Program Learning Outcomes.	Development & Quality Committee	End of academic year
2.4	In addition to the direct assessment methods mentioned above, indirect assessment of each course's learning outcomes is conducted through students completing a course questionnaire at the end of each semester. The results of these surveys are included in the Program Learning Outcomes Assessment Report as indirect assessment results for the learning outcomes..	Development & Quality Committee	End of each semester
2.5	Other surveys such as the Graduating Students Survey, Faculty Member Survey, Graduate Survey, and Employer Survey are also used for indirect assessment, and the results of these surveys are calculated in the Program Learning Outcomes Report.	Development & Quality Committee	End of academic year
3	**Program Improvement Actions**		
3.1	Collecting the Improvement Plan from the improvement actions listed in each course report and relating to the course learning outcomes that did not achieve the target score. Creating an improvement plan for the learning outcomes at the program level, which is included and approved in the Program's Annual Performance Report.	Development & Quality Committee	End of academic year
3.2	The results of the previously mentioned indirect assessment methods are taken into account when preparing the Program Learning Outcomes improvement plan.	Development & Quality Committee	End of academic year
3.3	Implementing the improvement plan in the following academic year. The impact of each action (listed in the improvement plan) on the relevant courses is calculated in the course report for those courses in the following academic year, and the overall assessment of the impact of the implemented improvement plan on the program is calculated at the end of the second semester of the following academic year.	Faculty / Department	Beginning of the next academic Year

15.6 Reviewing and updating the study plan

The curriculum update process is based on four main sources:

- Specialized academic standards
- The National Qualifications Framework
- Program objectives
- Labor market requirements

The process involves a series of steps as follows:

1. ***Gathering primary data:***
   - Conducting benchmarking with local and international programs.
   - Preparing a report of alignment with the National Qualifications Framework.
   - Gathering stakeholder feedback through:
     *Student surveys
     *Faculty surveys
     *Alumni surveys
     *Employer surveys

This data is submitted to the Study Plans and Learning Resources Committee.

2. ***Data collection and analysis:***

- The committee collects and analyzes all input to identify the strengths and weaknesses of the current curriculum.

3. ***Updating and developing the curriculum to align with learning outcomes:***

- Reviewing the curriculum to ensure it achieves the program's approved learning outcomes.
- Preparing an initial draft of the required modifications.

4. ***Updating and Improving the Curriculum:***

-Reviewing course descriptions and content, course coding and credit allocation, and teaching and assessment methods.

5. ***Evaluation and Review:***

-Conducting internal and external evaluations of the updated curriculum to ensure the quality of the modifications.

6. ***Approval by University Councils in the following order:***

Department Council, College Council, and then University Council.

7. ***Updating Final Descriptions:***

Updating course and program descriptions based on the revised curriculum.

The curriculum is also reviewed and updated periodically every five years to ensure continuous improvement.

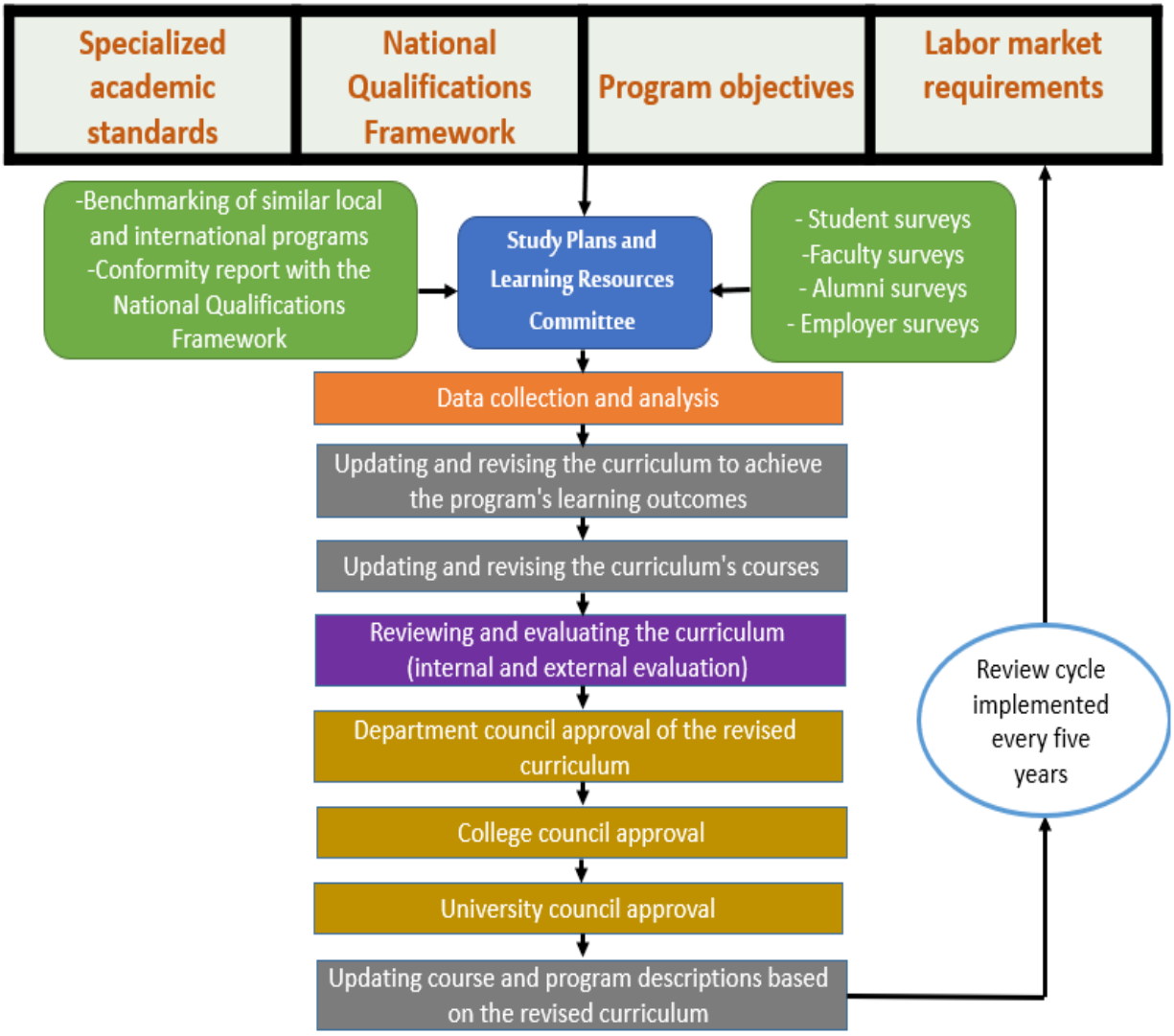

Figure 7: Steps of reviewing and updating the study plan

16- National Academic Accreditation Framework

The National Commission for Academic Accreditation and Assessment (NCAAA) in Saudi Arabia is a governmental body dedicated to ensuring the quality of higher education institutions and their academic programs. Established in 2004 as an independent agency under the supervision of the Ministry of Education, the NCAAA plays a vital role in enhancing and maintaining the standards of higher education across the Kingdom. Through its accreditation and quality assurance processes, the Commission works to elevate educational quality by evaluating universities, faculties, and academic programs across all disciplines.

The NCAAA has developed a comprehensive set of standards designed to serve as benchmarks for the quality and effectiveness of higher education programs. These standards support institutions in ensuring that their academic offerings meet national expectations and

international best practices. For program quality assurance, the NCAAA organizes all program-related activities into five main areas:

Table 6: Academic Accreditation Committees responsibilities.

NCAAA Standard		Responsible Committee
Standard 1	Management of Program Quality Assurance	The Program Context Committee
Standard 2	Teaching and Learning	Programs and Study Plans Committee
Standard 3	Students	Academic Supervision Committee
Standard 4	Teaching Staff	
Standard 5	Learning Resources	Learning resources and facilities Committee
All standards	All standards	SSRP Revision and Drafting Committee

17- Abbreviations

NCAAA: National Commission for Academic Accreditation and Assessment

NQF: National Qualification framework.

SSRP: Self-evaluation report for programs.

KPI: Key performance indicators.

CR: Course report.

APR: Annual program report.

CLOs: Course learning outcomes.

PLOs: Program leaning outcomes.

HOD: Head of Department.

MEWG: measurement and evaluation working group.

PLOWG: PLOs working group.

OPWG: Operational plan working group.

KPIWG: Key performance indicators.

SWOT: Strength weakness opportunities and threats analysis.

18- Program Surveys Templates

Surveys	Links
Course evaluation surveys	https://forms.gle/FwAs5zBn79CugXxm8
Program evaluation survey	https://forms.gle/FdouVCr4JTzHUMrj8
Student experience survey	https://forms.gle/Le4cbEoLsDMPGwYi6 https://forms.gle/SHDScnNH2t29KG5x8
Academic and Administrative staff Satisfaction survey	https://docs.google.com/forms/d/e/1FAIpQLSdLoCOcoTKJeKHtOT-LrqTAe1qsLx8sY_b823ZXBqQgSyIwKg/formResponse
Employer Evaluation survey	https://forms.gle/RNzLXVxrCYb2fFpz9
Alumni survey	https://forms.gle/FdouVCr4JTzHUMrj8