NAJRAN UNIVERSITY

كلية العلوم والآداب

قسم الفيزياء

Quality Assurance Manual of Physics Program

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION

1.1 Introduction

Quality assurance is primarily the responsibility of the internal system within an institution. It relies heavily on the commitment and support of all individuals involved in administration, management, and teaching. The National Commission for Academic Accreditation & Evaluation (NCAAA) has established procedures and standards that require programs to adopt a responsibility system and take appropriate actions to ensure high-quality criteria are met. This manual aims to provide guidance and support for these processes. Given the importance of the higher education system to beneficiaries, simply assuming that quality can be achieved is not enough. Independent processes must verify the quality to ensure that high standards are being met. The NCAAA accreditation processes for both higher education institutions and programs serve as this verification.

Quality assurance is a framework and a process aiming for excellence and openness. Program performance will be in line with its goal as a result of the process's aim to guarantee quality in the accomplishment of the program's mission. Having all programmatic functions—academics, students, support services, physical plant (i.e., buildings, classroom environment), research, and services to the local and regional community—perform at their peak is the main objective of quality assurance. The curriculum will be well-positioned to adjust to changes and give students the best education possible with ongoing evaluations aimed at achieving high quality in every aspect.

Quality assurance is an ongoing process that involves monitoring outcomes and ensuring quality in all academic activities. When this process is carried out effectively, program operations will continuously evolve and adapt to changes in the environment and societal needs. Accreditation, on the other hand, is based on evaluating program quality and outcomes at a specific point in time, demonstrating the alignment of purpose and performance. Therefore, quality assurance can be seen as a prerequisite for accreditation.

The accreditation process, whether at the institutional or programmatic level, entails evaluation by an external or internal body of Saudi Arabia (NCAAA) based on agreed-upon standards. If these standards are met, accreditation is granted. It is important to note that being accredited signifies that the institution and its programs meet international standards, and it is crucial to uphold these quality standards for ongoing and long-term performance improvement. Therefore, accreditation cannot be fully granted unless there is evidence of

continual evaluation and assessment, along with steps taken to maintain the effectiveness and quality of the programs.

Accreditation holds significant importance within the realm of higher education as it serves as a key component of quality assurance and institutional effectiveness. Therefore, the granting of academic accreditation offers numerous benefits both locally and internationally. By focusing on learning outcomes, accreditation ensures that educational programs have reached a level that meets international quality standards. This, in turn, guarantees that students possess a specific set of skills and abilities, safeguarding their interests.

Furthermore, accreditation has become a vital goal for academic and professional communities as it contributes to the improvement of educational policies and experiences, thereby enhancing the overall quality of education. Modern educational systems face the challenge of not only providing education but also ensuring that the educational environment and its outcomes maintain high standards. To enhance quality and adequacy, as well as contribute to national economic growth and development, the Council of Ministers' Resolution No. 94 has established organizational arrangements approved by the Education Evaluation Commission. This commission, as stated in the resolution issued on 7/2/1438 AH, is the competent authority in Saudi Arabia for assessing and accrediting education and training institutions and programs.

2.1 Definitions

Quality in Education

In the context of education or academic endeavors, quality refers to the level of excellence in teaching, learning, research, and overall educational experiences. It involves delivering education that meets or exceeds established standards, promotes student success, and prepares individuals with the necessary knowledge, skills, and competencies for their chosen fields.

Quality Assurance

Quality assurance refers to systematic activities and processes that are implemented to ensure that products, services, or processes meet specified requirements and standards. It involves planned and systematic actions to prevent issues, identify potential problems, and continually improve the quality of deliverables.

Quality Control

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

Academic Program

A structured and organized set of courses, modules, or activities offered by an educational institution that leads to the attainment of a specific academic qualification or degree. It is a comprehensive plan of study designed to provide students with a well-rounded education in a particular field or discipline.

Course

A course refers to a specific unit of study within an academic program. It is a distinct and individual component of the overall curriculum that focuses on a particular topic or subject area. Courses are designed to provide students with a structured learning experience, typically spanning a defined period of time, such as a semester or quarter.

Accreditation

Accreditation refers to the formal process of evaluating and recognizing the quality and standards of an educational institution or program. It is a voluntary and external review conducted by an accrediting agency or organization, which assesses whether the institution or program meets established criteria and standards of excellence.

Continuous Improvement

In the context of education or academic settings, continuous improvement is a fundamental principle that aims to enhance teaching and learning experiences, support student success, and advance overall institutional effectiveness. It involves collecting and analyzing data, feedback, and evidence from various sources, such as student assessments, surveys,

performance indicators, and stakeholder input. The continuous improvement cycle typically involves several stages, including:

- Assessment.

- Planning.

- Implementation.

- Evaluation.

- Adjustment.

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.

Benchmark

Comparison points or performance levels used to determine objectives and targeted performance levels. The benchmark may be internal through comparison with previous performance of the same college/program or a similar college/program in the same university, or it may be external through comparison with a counterpart outside the university (in this case, it must be ensured that the approved conditions for selecting an external benchmarking partner are met).

Domains of Learning

Broad categories of learning types expected to be acquired after completing the specified study period for an academic program, and they are identified and described in the National Qualifications Framework. The university and academic programs are committed to them when describing their academic programs and determining the appropriate teaching and assessment strategies for each domain of learning.

Learning Outcomes (LO)

Learning outcomes are specific statements that describe what learners are expected to know, understand, or be able to do after completing a course, program, or educational experience. They provide a clear and measurable indication of the knowledge, skills, and values that learners should have acquired.

Action Plans

Action plans are detailed strategies or roadmaps that outline specific steps, tasks, and timelines to achieve a set of goals or objectives. They serve as a practical guide for implementing and monitoring initiatives or projects, ensuring that actions are clearly defined and progress can be tracked effectively.

Annual Report

An annual report is a comprehensive document that provides an overview and detailed information about an organization's activities, achievements, financial performance, and future plans for a specific fiscal year.

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)

Also known as the National Qualifications Framework (NQF), is a framework that establishes a standard and consistent approach to qualifications and their levels in Saudi Arabia. It serves as a reference for the recognition, comparison, and alignment of qualifications across different education and training sectors in the country.

Teaching strategies

Teaching strategies are the methods, approaches, techniques, or activities employed by educators to facilitate learning and achieve desired learning outcomes.

Key performance indicators (KPI)

Key Performance Indicators (KPIs) are measurable metrics or indicators that are used to assess and track the performance, progress, and success of an organization, team, project, or individual. KPIs are typically aligned with specific goals, objectives, or desired outcomes and are used to monitor performance against predetermined targets or benchmarks.

Internal Auditor

The Internal Auditor is a faculty member working at the university who has experience in working in the field of quality assurance and academic accreditation, and has completed training courses that qualify him to provide technical support, review quality and accreditation documents, and assist the university's colleges/academic programs in achieving consistency of their internal quality management systems with the institutional system and ensuring the

quality of their outputs and improving them to qualify them to obtain/renew their academic accreditation.

The university's internal auditors team

It is a team that issues an annual decision to form it and includes a number of faculty members from various academic specializations at the university who have experience in the field of quality assurance and academic accreditation. The team's tasks focus on providing technical support and reviewing quality and accreditation documents for the university's colleges/programs under the umbrella of the institutional system for quality management and assurance and in accordance with the policies/procedures/models approved by the Deanship of Development and Quality.

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 A brief of the Program

Physics is one of the oldest and most important natural sciences, aiming to understand the fundamental laws governing the universe, from subatomic particles to galaxies and the vast cosmos. The Physics program is based on developing analytical skills, critical thinking, and the ability to solve complex problems using mathematical and experimental tools. The Physics program's curriculum aims to provide students with a solid foundation in theoretical and applied physics concepts, with a focus on their applications in multiple fields. Therefore, the curriculum includes a diverse set of courses covering the main branches of physics, including classical mechanics, electromagnetism, thermodynamics, modern physics, quantum mechanics, and mathematical methods for physicists. This is complemented by practical training, which includes laboratory experiments in various branches of physics, as well as a graduation project and field training, enabling students to apply theories in a practical setting. After completing the program, graduates will be able to continue their graduate studies in physics or related fields or enter the job market in areas such as scientific research, technological development, education, and industry. The curriculum is designed to meet the changing needs of the labor market while maintaining high academic standards consistent with the specialized standards of the Education and Training Evaluation Commission.

1.4 Mission of the Program

To prepare qualified graduates with laboratory and academic skills in physics that meets the requirements of the community.

1.5 Objectives of the Program

2. Introduce to the student the main branches of physics.

3. Help the student to understand the principles of physics

4. Provide the student with a solid foundation for a successful career that has the skills to continue his higher education.

5. Offer to the student the opportunity to study some of the advanced concepts and techniques of physics

6. Enable the student to develop skills in problem solving and critical and quantitative analysis and laboratory skills in physics.

7. Enable the student to develop skills in personal organization and teamwork.

The physics program's mission and objectives are consistent with the College of Science and Najran University's mission and objectives.

1.6 Objectives of the Manual:

The Quality Manual is the official document that outlines the program's policies and guidelines to ensure the quality of its operations and outcomes. It includes references to policies related to the program's key processes (teaching and learning, scientific research, and community partnerships), as well as the roles and responsibilities in managing the quality system. This manual aims to achieve the following:

1. **Raising Awareness and Clarifying Roles:**
   o Educate program members about the nature of the quality management system.
   o Clearly define the responsibilities and roles related to quality assurance.
2. **Providing a Reliable Quality Reference:**
   o Serve as a key reference for the academic program in establishing, implementing, and developing internal quality systems.
3. **Fulfilling Accreditation Requirements:**
   o Ensure compliance with the program accreditation requirements set by the Education and Training Evaluation Commission.
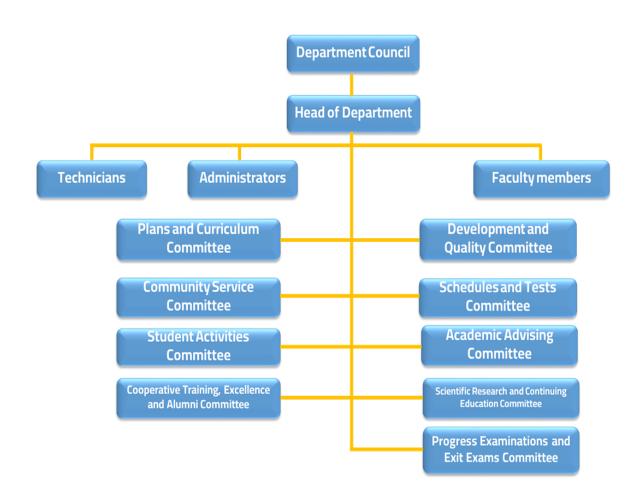
CHAPTER 2

THE PROGRAM QUALITY SYSTEM

2.1 The Program Quality system

The Program Quality System of the Physics program refers to a set of processes, policies, and procedures in place to ensure the quality and effectiveness of the program. It encompasses various aspects of the program design, delivery, assessment, and continuous improvement to meet the needs and expectations of students, faculty, employers, and other stakeholders.
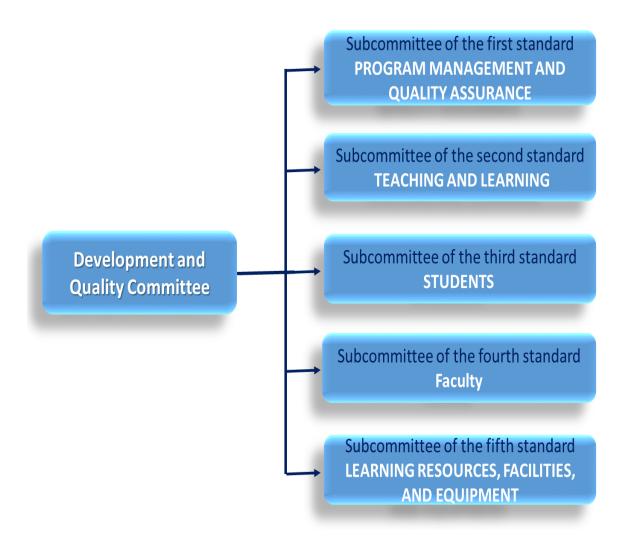
The physics department chart contains different committees that cover the activities and the processes in the department/program level.

2.1.1 Organizational structure of the physics department

2.1.2 Development and Quality Committee:

All members of the Physics Department are included in this committee and are divided into five subcommittees "Standards for program Accreditation"

```
Development and        →    Subcommittee of the first standard
Quality Committee           PROGRAM MANAGEMENT AND
                            QUALITY ASSURANCE

                       →    Subcommittee of the second standard
                            TEACHING AND LEARNING

                       →    Subcommittee of the third standard
                            STUDENTS

                       →    Subcommittee of the fourth standard
                            Faculty

                       →    Subcommittee of the fifth standard
                            LEARNING RESOURCES, FACILITIES,
                            AND EQUIPMENT
```

2.2 Tasks in managing the quality system at the department/program level:

2.2.1 Department Council Responsibilities:

In addition to its duties as outlined in the Department Council's organizational regulations, the Council shall be responsible for:

- Reviewing and approving the proposed structure of advisory committees for departmental programs.

- Evaluating and endorsing annual operational plans for all department-affiliated programs.

- Examining and approving all quality assurance documentation, including:

    - Evidence submissions.

    - Program descriptions.

    - Assessment reports.

    - Improvement plans.

    - Other accreditation-related materials.

- Addressing implementation challenges faced by quality coordinators in departmental programs and proposing corrective actions.

- Deliberating on matters concerning:

    - New program development proposals.

    - Existing program enhancement initiatives.

    - All continuous improvement recommendations.

The Council shall make formal decisions on all such matters under its purview.

2.2.2 Head of Department: Quality Management Responsibilities

In addition to standard duties outlined in organizational regulations, the Head of Department shall oversee quality system management through the following responsibilities:

1. Personnel & Committee Management
- Annually nominate Program Quality Coordinators for Department Council approval

- Approve Quality Coordinators' recommendations for Quality Subcommittee members

2. Quality Oversight & Reporting

- Identify quality-related matters requiring Department Council review
- Submit program documents/reports to:
  - College Council for approval
  - Designated archives for official record-keeping
  - College Development and Quality Unit for review
- Oversee implementation of internal audit recommendations

3. Benchmarking & Continuous Improvement

- Coordinate with internal/external benchmarking partners to exchange performance indicator data
- Conduct monthly meetings with Quality Coordinators to:
  - Monitor operational plan progress
  - Address implementation challenges

4. Accreditation Management

- Prepare programs for external accreditation reviews
- Attend all auditor meetings (independent and external review teams)
- Submit and review reports with Department Council:
  - Independent audit findings
  - External review team recommendations
  - Accreditation conditions (develop corrective action plans when required)

5. Delegation Authority

- May officially delegate specific tasks to faculty members
- Must communicate all delegations to department faculty

2.2.3 Quality Coordinator Responsibilities

1. Committee Management
- Propose quality sub-committee heads and members to the Department Head
- Provide technical guidance to sub-committees regarding:

  • Role understanding

  • Task integration within program operational plans

2. Meeting Participation
- Attend all:

  • College Development & Quality Unit meetings

  • Department Head meetings

  • Training workshops by Deanship/College Quality Units

3. Quality Implementation
- Conduct bi-monthly meetings with Program Quality Committee to:

  • Monitor operational plan progress

  • Track quality/accreditation tasks

- Distribute roles among committees for annual quality report preparation

4. Benchmarking & Reporting
- Recommend internal/external benchmarking partners
- Prepare comprehensive annual quality reports ensuring:

  • Complete documentation

  • Compliance with requirements

5. Accreditation Preparation
- Oversee self-study report preparation and documentation
- Ensure fulfillment of internal review requirements
- Serve as program liaison during accreditation processes

6. Documentation Management
- Upload required documents to:

  • Internal review systems

  • National Center for Academic Evaluation portal (post-review)

- Implement reviewer recommendations

7. Continuous Improvement
- Coordinate with internal reviewers throughout accreditation phases
- Supervise program preparation for external reviews
- Execute additional quality improvement tasks as assigned by Department Head

2.2.4 Development and Quality Committee Responsibilities

This committee chaired by the Program Quality Coordinator and includes heads of all five subcommittees as members

1. Quality Assurance Oversight
- Ensure comprehensive quality control of all program-level documentation
- Conduct pre-submission reviews of all materials for:
  - • Approval processes
  - • Archival purposes
  - • External requests from university authorities

2. Documentation Standards
- Verify completeness and accuracy of all:
  - • Required data fields
  - • Supporting information
  - • Documentation processes

3. Operational Quality Control
- Systematically review and validate:
  - • Program operations
  - • Academic outputs
  - • All official deliverables

2.2.5 Subcommittees Responsibilities:

These committees carry out their tasks in coordination with the unified committees in all university programs in accordance with the guide for program committees in colleges issued by the University Agency for Educational Affairs and circulated to colleges on 5/28/1444 AH "taking into account any amendments that may occur to it and approved by the University Agency for Educational Affairs".

CHAPTER 3
THE QUALITY MANAGEMENT SYSTEM

3.1 The Quality Management System and its Elements

The quality management system in this guide refers to the comprehensive framework implemented by the program in alignment with the university's official standards. This system:

1. **Documents and Standardizes**

   ✓ Formalizes program policies and procedures

   ✓ Establishes consistent operational protocols

2. **Ensures Quality Outcomes**

   ✓ Monitors and enhances program outputs

   ✓ Supports achievement of institutional goals and mission

3. **Drives Continuous Improvement**

   ✓ Systematically improves all performance aspects

   ✓ Embodies the university's commitment to excellence

The system serves as both a structural foundation and a dynamic tool for maintaining and elevating academic standards.

3.2 Quality Management System Framework

1. **System Inputs**

   The foundational resources that enable quality outcomes:
   - Human and material resources
   - Governance policies and regulatory frameworks
   - Institutional infrastructure

     Function: Serve as the basis for planning and directly influence implementation quality through cyclical interaction between inputs, processes, and outputs.

2. **Core Processes**

   Structured operations that transform inputs into outcomes:
   - Academic Core:
     • Teaching and learning methodologies

• Research activities

  • Community engagement initiatives

- Support Functions:

  • Administrative operations

  • Financial management

  • Student support services

  Note: Each primary process contains specialized sub-processes with defined procedures and quality benchmarks.

3. System Outputs

Tangible results demonstrating quality effectiveness:
- Academic achievements
- Research outcomes
- Community impact metrics

  Quality Indicator: Output standards reflect the effectiveness of both inputs and processes.

4. Quality Feedback Mechanism

Continuous improvement drivers:
- Real-time implementation evaluations
- Post-process outcome assessments
- Performance indicator analysis

  Function: Identifies improvement opportunities, closes the quality cycle, and ensures system sustainability.

5. Operational Environment

Contextual factors influencing quality:
- Internal Ecosystem:

  • Leadership commitment

  • Organizational governance

  • Resource allocation

  • Institutional culture

  • Technology infrastructure

- External Influencers:
  - • Higher education trends
  - • Labor market demands
  - • Accreditation standards
  - • Global ranking criteria

This framework creates an integrated quality ecosystem where environmental factors shape inputs, which through managed processes produce measurable outputs, with feedback ensuring continuous system enhancement. The cyclical nature ensures responsive adaptation to both internal and external quality demands.

3.3 The Quality Circle

The university adopts the Deming PDCA model for continuous improvement/development through successive cycles of four interconnected processes: planning-implementation-evaluation-improvement, where the outputs of each of these processes are considered inputs to the next process.

1. **Plan**
   - Establish objectives and processes
   - Develop quality benchmarks and action plans

2. **Do**
   - Implement planned processes and procedures
   - Execute quality initiatives

3. **Check**
   - Monitor and evaluate outcomes against targets
   - Analyze performance data and identify gaps

4. **Act**
   - Standardize successful practices
   - Implement corrective actions for improvement

This model ensures dynamic quality advancement through structured, recurring improvement cycles that build upon previous outcomes

3.4 The Quality and continuous improvement processes and procedures at the program level

Stages of the program planning process

PROGRAM MISSION → PROGRAM OBJECTIVES → LEARNING OUTCOMES → STUDY PLAN → LEARNING OUTCOMES MEASUREMENT PLAN → PROGRAM DESCRIPTION → COURSE DESCRIPTION

The program operates in accordance with the executive processes and policies authorized by the University Agency for Educational Affairs, as well as the models and methods authorized by the Deanship of Development and Quality's Education and Learning Unit.

3.4.1 Quality determinants of the program's Mission and objectives:

1. **Alignment and Development**
   ✓ Consistency with the mission and objectives of the department

2. **Stakeholder Engagement**
   ✓ Active involvement of relevant beneficiary sectors in the formulation process.

3. **Operational Guidance**
   ✓ The mission statement serves as the foundational directive for all program operations and activities

4. **Objective Alignment**
   ✓ Clearly articulated objectives derived directly from the mission text

5. **Approval Process**
   ✓ Completion of internal review stages
   ✓ Formal approval by authorized university councils

6. **Dissemination Strategy**
   ✓ Broad communication through multiple channels to all beneficiary sectors

7. **Continuous Review & Improvement**
   ✓ Regular updates in accordance with:

- Approved mission review policies
- Evolving university strategic directions (local/international)
- Annual evaluation outcomes
- External accreditation body recommendations

3.4.2 Quality determinants of program learning outcomes:

To ensure academic excellence and relevance, program learning outcomes must adhere to the following quality standards:

1. Alignment with Standards & Frameworks

✓ **Academic Standards**:

- Conformity with the Education and Training Evaluation Commission's approved standards
- Compliance with the National Qualifications Framework (NQF) requirements.

✓ **Institutional & Labor Market Alignment**:

- Consistency with the program's approved mission
- Alignment with university graduate attributes
- Responsiveness to labor market needs and industry benchmarks

2. Program-Specific Design

✓ **Stakeholder Engagement**:

- Collaboration with beneficiaries, industry experts, and academic specialists in development

3. Review & Approval Process

✓ **Quality Assurance**:

- Completion of internal review and accreditation by official academic councils.

✓ **Transparency & Communication**:

- Publication and dissemination to all relevant stakeholders

4. Continuous Improvement

✓ **Dynamic Updating Mechanism**:

- Regular revisions based on:
  - ❖ Developments in the academic discipline
  - ❖ Updated accreditation standards (Education and Training Evaluation Commission)
  - ❖ Labor market trends and global benchmarks
  - ❖ University strategic directions
  - ❖ Annual and periodic evaluation results

5. Implementation & Monitoring

✓ **Program Planning Matrix**:

- Mandatory development of a program planning matrix (aligned with the Deanship of Development and Quality's model)
- Formal approval by university councils
- Integration into annual operational plans with measurable performance indicators

3.4.3 Determinants of the quality of the program's study plan:

To ensure academic rigor and relevance, the program's study plan must meet the following criteria:

1. Content & Curriculum Design

✓ **Comprehensive Course Coverage**:

- Courses must fully align with and support the program's approved goals and learning outcomes.

✓ **Scientific & Professional Relevance**:

- Content must reflect current advancements in the field, including technical and professional developments.

✓ **Balanced Curriculum Structure**:

- Equilibrium between general education and specialized courses.

- Integration of theoretical knowledge and practical application.

2. Coherence & Compliance

✓ **Logical Course Sequencing**:

- Courses must build progressively to achieve intended learning outcomes.

✓ **Exit Point Requirements (if applicable)**:

- Clear definition of criteria for intermediate or final exit points (e.g., diplomas, certifications).

✓ Institutional Policy Adherence:

- Compliance with university-approved frameworks for designing, modifying, and implementing study plans.

3. Review & Accreditation

✓ **Quality Assurance Processes**:

- Completion of internal review and accreditation by designated academic councils.

✓ **Stakeholder Communication**:

- Transparent dissemination of the study plan to all relevant beneficiaries (students, faculty, industry partners).

4. Continuous Improvement

✓ **Periodic Review & Updates**:

- Regular revisions based on:
  - ❖ Changes in the program's mission, objectives, or learning outcomes.
  - ❖ Evolving labor market demands and professional trends.
  - ❖ Updates in accreditation standards (national/international).
  - ❖ Emerging academic and industry developments.

3.4.4 Quality determinants of the program learning outcomes measurement plan

To ensure effective assessment and continuous improvement, the measurement plan for program learning outcomes must adhere to the following quality standards:

1. Alignment & Clarity

✓ **Institutional Compliance**:

- Follow frameworks and guidelines approved by the Teaching and Learning Unit.

✓ **Clear Linkage**:

- Explicit alignment between **course-level** and **program-level** learning outcomes.

2. Comprehensive Assessment

✓ **Full Coverage**:

- Measure **all** learning outcomes at both course and program levels.

✓ **Advanced Course Focus**:

- Prioritize measurement in **capstone/"crown" courses** to evaluate cumulative learning.

3. Appropriate Measurement Tools

✓ **Diverse Methods**:

- Use **direct** (e.g., exams, projects) and **indirect** (e.g., surveys, portfolios) assessment tools.

- Select methods suited to the **discipline** and **outcome type** (knowledge, skills, competencies).

✓ **Clear Indicators**:

- Apply measurable benchmarks to evaluate student achievement.

4. Structured Implementation

✓ **Defined Roles**:

- Clarify responsibilities for faculty, departments, and committees in executing assessments.

✓ **Realistic Timeline**:

- Set appropriate schedules for data collection, analysis, and reporting.

5. Continuous Improvement Cycle

✓ **Sequential Phases**:

- Ensure a logical flow from measurement → analysis → action.

✓ **Data-Driven Enhancements**:

- Use results to refine courses and program objectives.

6. Review & Transparency

✓ **Quality Assurance**:

- Undergo internal review and incorporate feedback.

✓ **Approval Process**:

- Secure formal endorsement from academic councils.

✓ **Regular Updates**:

- Revise the plan based on changes in:

- ❖ Program outcomes | Course content | Measurement tools | Accreditation requirements.

✓ **Stakeholder Communication**:

- Publish and share the plan with students, faculty, and accreditors.

3.4.5 Quality Assurance in Teaching, Learning, and Assessment Strategies

Effective quality assurance requires:

1. **Strategic Alignment**

   - Clear linkage between **teaching methods, learning activities, and assessment strategies** to ensure they collectively support program learning outcomes.
   - Systematic mapping of instructional approaches to intended competencies.

2. **Definition of Key Strategies**

   - **Teaching Strategies**: Structured methodologies faculty employ to facilitate student learning (e.g., active learning, flipped classrooms, case-based instruction).
   - **Learning Strategies**: Approaches students use to achieve outcomes (e.g., collaborative projects, self-directed learning).
   - **Assessment Methods**: Tools to measure achievement (e.g., rubrics, portfolios, standardized exams).

3. **Regulatory Framework**

   - **Compliance with the** National Authority for Evaluation and Accreditation **guidelines, which define:**

     - ❖ Teaching strategies as **systematic plans** to attain educational goals.

❖ Learning strategies as **student-centered processes** to acquire knowledge and skills.

4. **Impact on Program Quality**

- **Teaching/learning methods directly influence:**

  ❖ Student engagement and retention.
  ❖ Mastery of competencies.
  ❖ Program accreditation outcomes.

5. **Continuous Improvement**

- **Regular review of strategies to ensure:**

  ❖ Relevance to evolving educational standards.
  ❖ Effectiveness in meeting learning outcomes.
  ❖ Alignment with labor market or disciplinary advancements.

3.5 Quality of program specification

- adherence to the most recent versions of the models that have been authorized by the Education and Training Evaluation Commission.
- Matching the information in the specification of the program plan with the authorized study plan for the program;
- Including accurate and correct information in all paragraphs and items of the description.
- The authorized detailed plan for measuring the program learning outcomes and the learning outcomes matrix/methods for evaluating the program learning outcomes included in the specification should be consistent.
- "Classroom/extracurricular" teaching and learning methods and activities are suitable for the field's nature and related learning objectives.
- conformity of all information in the program specification about student support and admittance to the rules and guidelines that the program or university has approved.
- Adherence to the quality manual and associated policies and procedures in the program's quality assurance procedures.
- All aspects of the program's authorized mission are included in the evaluation of its quality, and different measuring techniques are employed.
- The main performance indicators for academic programs according to the latest versions of the Education and Training Evaluation Commission and a number of additional performance indicators approved for the program to measure its objectives
- The suitability of the additional performance indicators for the objectives to be measured in terms of type, number, and measurability.
- The appropriate identification of the annual target values, based on previous monitoring and benchmarking.
- The suitability of the external benchmarking partner in terms of similarity in the nature of the program, its accreditation, and consistency in measurement methods and tools.

- Preparing a description card for each performance indicator that includes all information about the indicator.
- Attaching the approved and proven tools and forms for measuring performance indicators.
- Coordination with the university's performance measurement unit and adherence to the criteria for selecting indicators, selecting internal/external review partners, and the target values for indicators.
- Meeting the internal review levels for description and accreditation from official councils.
- Making the approved specification available to the beneficiary sectors.
- Reviewing the specification periodically and updating/developing it in accordance with the university's policy for approving, amending and developing academic plans and program, which specifies the time of review (annual/comprehensive) and the nature of the resulting amendments (essential/non-essential), responsibilities and levels of review and accreditation.

3.6 Quality of course specification

1. **Program-Aligned Development**
   - Course specifications must fully align with the approved program learning outcomes and objectives.

2. **Regulatory Compliance**
   - Strict adherence to the latest standards and templates issued by the Education and Training Evaluation Commission.

3. **Comprehensive Documentation**
   - Complete fulfillment of all required sections and components in the course specification document.

4. **Quality Assurance Process**
   - Successful completion of internal review and approval by designated academic councils.

5. **Transparency & Accessibility**
   - Official publication and dissemination of approved specifications to all relevant stakeholders.

6. **Continuous Improvement Cycle**
   - Regular review and updates conducted in accordance with:
     - ❖ University policies for curriculum modification
     - ❖ Scheduled review timelines
     - ❖ Classification of amendments (essential/non-essential)
     - ❖ Defined responsibilities and approval pathways

3.7 Operational Planning

Annual Operational Planning Commitment: All academic programs at the university are required to:

1. **Develop an Annual Operational Plan**
   - Align with the university's and college's strategic executive plans
   - Incorporate measurable objectives that advance the program's mission

2. **Implement Continuous Improvement**
   - Address identified performance gaps from previous assessment reports
   - Include targeted interventions for quality enhancement

3. **Utilize as Governing Framework**
   - Serve as the primary reference for all program activities and decisions throughout the academic year
   - Guide resource allocation and priority setting.

4. **The operational plan should include improvement initiatives and activities covering the following areas:**
   - The educational process.
   - The research process.
   - Community services.
   - Supporting operations (student support and guidance - preparation and training - employment - learning resources, facilities and equipment).
   - Follow-up and evaluation (follow-up on the committees' implementation of their activities, and evaluate their outputs).

This systematic planning process ensures alignment with institutional goals while maintaining focus on program-specific development needs.

3.8 Implementation Process

- All participants in the academic program pledge to follow the approved plans for the programs and the approved policies, processes, and regulations. Without making any changes.

- If new circumstances arise that necessitate exceptional measures or changes to the approved program plans, members or leaders of the program's executive committees may submit a proposed amendment along with its rationale to program management. However, implementation of the amendment cannot begin until it is approved by the relevant authority at the department or college level (depending on the scope of the change and as outlined in the program's organizational guidelines). Once approved, all program members must be informed of the amendment, and it should be officially recorded in the program's documentation."

- All members of the program and the program's executive committees are responsible for preparing files and records that include documentation of the implementation of the tasks and activities assigned to them - each according to his role - in paper and electronic form.

- All evidence and records related to the implementation of the program's operational plan initiatives and activities are attached to the quarterly follow-up reports and annual achievement reports.

3.8.1 Update course file content:

1. CV of the faculty member/members assigned to teach the course.
2. Time table of the faculty member/members assigned to teach the course.
3. Approved course specification "Education and Training Evaluation Commission Form".
4. Matrix of course learning outcomes "CLOs" versus program learning outcomes "PLOs".
5. Matrix of course learning outcomes "CLOs" versus course topics.
6. Table of test specification of the course.
7. Written midterm/final exam paper with answer sheet.
8. Models of evaluated student work attached to the performance evaluation scale Rubrics "In the case of essay questions, projects or presentations ....".
9. A report of measuring students' achievement of course learning outcomes.
10. Students evaluation for the course.
11. Course result.
12. Course report "Education and Training Evaluation Commission Form".

At the end of the semester, there is a committee that reviews the course files and course reports.

3.8.2 The program file should also be updated annually and the required files should be completed, which are:

1. The approved program specification.
2. The approved plan for measuring the program learning outcomes.
3. The annual program report "approved"
4. The approved annual reports for measuring the program learning outcomes.
5. The approved annual reports for the annual monitoring of the program performance indicators.
6. The opinion poll reports conducted during the year "approved".
7. A record of the updates made to the program specification and their justifications.

3.9 Evaluation Process

The program undergoes an annual evaluation process, in addition to a comprehensive evaluation process every five years.

3.9.1 The annual "periodic" evaluation process produces two types of reports:

- ✓ Conducted within the improvement cycle, follow-up reports assess progress in meeting targets, highlight any difficulties in execution, and propose solutions.

- ✓ Prepared annually, achievement reports analyze the fulfillment of targets and overall progress. They include benchmarked performance evaluations, pinpoint weaknesses, and propose corrective measures for the next improvement cycle

3.9.2 Quality determinants of periodic reports:

The program reports should meet the requirements of good documentation, and meet the following:

- ✓ Adherence to the approved templates for "Operational Plan Follow-up and Completion Reports/Decision Reports/Program Annual Report"
- ✓ Review of the improvement proposals and priorities included in the previous year's report/the procedures implemented in this regard/the impact of the procedures implemented.
- ✓ Annual monitoring values of the relevant approved performance indicators.).
- ✓ Analysis of the results of the annual monitoring of the indicators.
- ✓ Identifying strengths and aspects that require further improvement.
- ✓ Identifying improvement priorities to be included in the improvement plan for the following year.

3.9.3 Comprehensive evaluation of the program:

The program's first comprehensive evaluation occurs after the inaugural cohort graduates or during initial accreditation application (to the Education and Training Evaluation Commission or other recognized bodies for international accreditation). Re-evaluations follow each accreditation renewal cycle. The assessment covers all program aspects—inputs, processes, outputs—and measures compliance with accrediting standards, backed by evidence. The self-study report (using the accreditor's template) is central to the external team's review.

3.9.4The process of the comprehensive evaluation for the program:

The program undergoes a full evaluation every five years, synchronized with its accreditation cycle. This evaluation thoroughly assesses all aspects of program performance, including inputs, processes, and outputs, using the standards framework of the **Education and Training Evaluation Commission**. The results inform the program's **Self-Study Report**.

Stages of the Comprehensive Evaluation Process

1. **Formation of Evaluation Committees**
   - Establish comprehensive evaluation committees and define their roles and responsibilities.
2. **Completion of Self-Assessment Documentation**
   - Finalize the program's self-assessment metrics document, including all supporting evidence for each standard.
3. **Preparation of the Self-Study Report and Attachments**
   The report must include:
   - External review/accreditation visit report (if applicable) and the program's response to its recommendations.
   - Documentation of the self-evaluation process (including committee members, tasks, job titles, and procedures for each standard).
   - Analytical report on key performance indicators (KPIs), including performance trends and benchmark comparisons.

- Independent opinion report on the self-evaluation.
- All referenced evidence uploaded to the NCAAA's electronic accreditation portal.

Guidelines for Attachments:

- Ensure all attachments directly support the report's content.
- Use concise, descriptive names for each attachment.
- Exclude non-essential files (e.g., lengthy emails, raw survey data, notes) unless requested during the reviewers' site visit.

4. **Fulfillment of Program Accreditation Prerequisites**

- Meet all NCAAA accreditation eligibility requirements.

5. **Internal Review of Documentation**

Conducted in two phases:

- **College Level**: Reviewed by the College's Development and Quality Unit.
- **University Level**: Reviewed by the Deanship of Development and Quality. The program must address all internal feedback before proceeding.

6. **Independent External Review**

- Performed by an independent expert/team with expertise in academic accreditation and the program's discipline.
- The program must address the team's recommendations and draft improvement plans before submitting documents to NCAAA.

7. **NCAAA External Review**

- An NCAAA-appointed team (accreditation specialists and subject-matter experts) evaluates:
- Compliance with accreditation standards.
- Supporting documentation.
- A **site visit** verifies infrastructure, labs, learning resources, and stakeholder interviews (faculty, students, beneficiaries).

8. **Post-Review Actions**

- The NCAAA team issues recommendations; the program develops a **time-bound improvement plan** prioritized by urgency.

- o Progress is monitored internally (program/college/university) and via annual reports to NCAAA.

9. **Accreditation Decision**

   NCAAA may grant:

   - o **Full accreditation** (5 years).
   - o **Conditional accreditation** (with stipulated improvements within a defined timeframe).
   - o **Denial of accreditation**.

     Regardless of the outcome, the program continues **quality assurance and improvement** through:
   - o Designing/executing enhancement plans.
   - o Ongoing performance monitoring.

3.10 Improvement Process

The enhancement framework is driven by insights from quarterly, annual, and comprehensive evaluation reports, which identify performance gaps and improvement opportunities. During implementation, corrective actions are tailored to address deficiencies through one or more of the following approaches:

- **Immediate corrective actions** (urgent interventions)
- **Preventive measures** (proactive solutions)
- **Structured improvement/development plans** (systematic upgrades)

This ensures targeted and sustainable progress based on empirical findings.

Directory Credentials

Council / Committee	**Physics Department Council**
Reference No.	14451113-0496-00017
Date	**2024/05/29**