University of Hail

College of Engineering
Department of Industrial Engineering

Program Quality Assurance System Manual

Master in Quality Engineering and Management

Industrial Engineering Department

College of Engineering

University of Hail

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Introduction

Quality in university education is considered as one of the main requirements that universities are keen to achieve, to acquire advanced positions in the list of distinguished international universities. Many distinguished universities around the world seek to apply quality management methods to improve the efficiency of their employees and ensure the quality of their outcomes.

The quality system has received significant attention in most Saudi Arabian Universities, including the University of Ha'il. It is considered as one of the cornerstones for a successful management model aimed at keeping pace with and trying to adapt to international, regional, and local changes.

The era of quality no longer recognizes the stereotypical practices defined by the traditional function of programs at universities. The new era has also imposed the necessity on these programs to develop the practices and activities of their academic work. Therefore, the process of quality assurance at the universities, including the University of Ha'il, is no longer a partial issue concerning a specific aspect of its activities or some of its functions. Consequently, it has become an integrated system that targets all aspects of the university including all its intellectual and material variables. It exceeds the traditional quality goal of quality planning, control, and evaluation to integrate the university's human resources as expertise producing quality in its surroundings and achieving general satisfaction of its performance.

Recognizing the importance of the quality of its programs and the continuous improvement and development of its performance, the University of Ha'il has adopted an effective quality assurance and management system. It is linked to the university's senior management, covering all its activities and units. All stakeholders, such as, teaching staff, employees, and students, participate in this endeavour. It is subjected to evaluation and continuous improvement.

Keen to build an integrated system to ensure the quality of its programs, the University of Ha'il has prepared this comprehensive manual of the quality assurance system for the Master of Quality Engineering and Management (QEM) program to determine the goals of implementing this system and the units contributing to its achievement, the roles assigned to each level, and the activities it includes.

To achieve the principle of scientific methodology in the preparation of developmental evidence, it was necessary to rely on one of the methodologies encompassing professional evidence based on description and analysis. These are based on several procedures, including the design, review, and evaluation of programs, as well as the evaluation of the quality assurance system for those programs. The methodology represents a scientific and practical framework, which approaches program practices to innovation and development, and moves away from stereotypes and traditionalism. The effectiveness of this methodology is also clearly demonstrated by its investment in aspects associated with improving the performance of the program, to address all the practical aspects of improving these practices continuously.

Manual Goals

1. Responding to the program accreditation requirements of the National Center for Evaluation and Academic Accreditation (NCAAA).

2. Developing a general framework to ensure the quality of the programs at the University of Ha'il.
3. Helping programs with the different aspects of the quality assurance system built at the University of Ha'il's programs.
4. Providing adequate and accurate information on the stages and requirements of ensuring the quality and accreditation of programs at the University of Ha'il.
5. Governance of procedures associated with ensuring the quality of programs at the University of Ha'il.

Methodology of Using the Manual of Program Quality Assurance System

The methodology to use the manual of the quality assurance system for the program is centered around the following axes:

1. General framework of the quality assurance system for the program.
2. Quality of the design of the program.
3. Quality of the course building.
4. Quality of the course review and evaluation.
5. Quality of review and evaluation of the program.
6. Quality assurance system governance of the program.
7. Success Guarantees in the implementation of the quality assurance system of the program.
8. Mechanism for reviewing and evaluating the quality assurance system of the program.

First Axis: General Framework of Program Quality Assurance System

First: Concept of the program quality assurance system

The program quality assurance system is intended as a follow-up and evaluation of the quality of the program.

It serves two different purposes:

To ensure the required level of quality and its development, and

To provide a guarantee to stakeholders that quality is maintained at levels of practice similar to those achieved by good internationally outstanding programs.

Among the parties involved in this context are the program's staff, graduates, employers, and the society in its broader sense, including specialized professional associations and the labor market.

Quality assurance usually includes both internal and external processes. Quality assurance mechanisms are expected to be put in place within each program on an ongoing basis as part of the delivery of the regular program, usually involving some external inputs. General credibility of quality requires an external periodic evaluation by an independent institution and its advice is considered as an important element for program strategic development.

Second: Program quality assurance system planning

The process of improving the quality of the program includes:

1. Evaluating the current performance levels of the program.
2. Evaluating the environment in which the program is active.
3. Setting strategic priorities for the development and setting objectives, to develop and implement plans,
4. Monitoring what is happening in order to make the necessary adjustments, and evaluate the results achieved.

These steps include a recurring cycle of planning and review. The main plans may include a series of activities spanning for years, with several steps to be taken, with the results of each step being evaluated in stages within a long-term plan.

Although monitoring should be an ongoing process, there are usually two periods in which the evaluation procedures are conducted. The first one is performed annually, whereby the performance of the program is monitored and the required adjustments are made. The second is conducted in a longer-term cycle of major periodic reviews. The quality assurance and accreditation, which is a periodic evaluation, must be carried out in synchronization with external reviews conducted by The NCAAA every seven years to grant accreditation or re-accreditation.

Although the planning and review cycle takes the form of a set of steps that follow in a single timeline according to timetables, these steps may be repeated in practice or changed flexibly in response to developments or changing circumstances, for example, performance review may lead to the need to redefine goals and prepare a new development plan.

In examining these stages, it must be recognized that they relate to activities at different levels within the Program as a whole conducted by academic and administrative

committees and units, individual programs, or a series of programs run by a department or college.

Third: Program quality assurance policy

It is important to take into account that the quality assurance policy of the program is an integral part of the policy of the general quality of the University of Hail, which seeks to ensure that the program achieves its goals by its operational plan and national orientations, the most important of which is the vision of the Kingdom of Saudi Arabia. This is achieved by:

1. Supporting the implementation of the operational plan of the program and achieve its objectives.
2. Achieving the requirements of the beneficiaries of the program and to constantly seek to meet their aspirations.
3. Reviewing Periodically the program by national and global developments and orientations.
4. Preparing graduates to meet the needs of the labor market and keep up with the scientific developments associated with specialization.
5. Training and continuous development of the program's staff, faculty, administrators, students, graduates, and others.
6. Providing the right environment to improve the educational and administrative process associated with the program.
7. Continuously evaluating all inputs, processes, and outcomes of the program.
8. Involving all stakeholders and beneficiaries in the planning and development of the program.
9. Seeking to spread the culture and practices of quality among all employees of the program.

Fourth: The importance of the quality assurance system for the program

The quality assurance system of the program aims to:

1. Ensure the provision of a sophisticated program capable of global competition and access to national and international credits.
2. Ensure that the program is consistent with the national qualification’s framework.
3. Identify the rules, policies, and procedures that lead the educational process in the program.
4. Adjust the performance of the program’s staff members and administrators to achieve the quality of the educational process in the program.
5. Document and evaluate self-performance and make reference comparisons of the performance of the program according to key and specific performance indicators.
6. Develop and implement plans for continuous quality improvement in the program.

Fifth: Program foundations of building a quality assurance system

The quality system of the program includes all the activities of the program in various fields and different levels. The responsibility to ensure the quality of the program lies within the responsibilities of the department. The organizational structure of the program includes different committees, all of which aim primarily to support quality processes and ensure that the program complies with national and international standards at the level of educational programs.

The quality assurance system of the program is based on the foundations and principles that make the system effective, efficient, and sustainable. The most notable ones are:

1. The standards of the National Center for Evaluation and Academic Accreditation are the basis for building a quality assurance system for the program.
2. The system must achieve the obligation of all entities to perform their responsibility by the organizational structure of the program and the regulations adopted, by the regulations and bylaws governing it, regardless of its organizational level.
3. The quality system relies on activating activities for good practices contained in national standards while measuring their effectiveness and efficiency through previously defined performance indicators, analyzing them, and including their results in reports submitted to relevant authorities, to work on the implementation of their improvement recommendations.
4. Self-evaluation tools are based on the evaluation methodology of the National Center for Evaluation and Academic Accreditation in following up and evaluating the department's commitment to good practices to ensure continuous improvement in the level of performance quality.
5. The responsibility for ensuring the quality of the program is the responsibility of the college and the academic department that manages the program.
6. Quality is linked to all activities and practices of the program. This indicates that the quality assurance procedures in the program include facilities, equipment, recruitment, and the relationship of the program to the groups it targets and administrative processes whose task is to link all of the above. This means that a quality assurance system must include both individuals, regulatory committees and operations, academics, and others related to all components of the internal program.
7. Emphasizing the importance of the quality of the program's outcomes through the services and activities it offers. The focus on quality has been linked in the past to inputs such as scientific qualifications, abundant equipment and facilities, and the adequacy of learning sources. Despite the importance of the quality of these elements, the greater share of the focus on quality will center on outcomes while reaffirming the quality of inputs and these processes remains important, and maintaining the level of associated quality standards remains there.
8. Emphasizing continued support for quality development procedures rather than focusing on trying to reach the required standards.
9. The need for the program to establish constructive relationships based on trust and support between the program and the corresponding programs, taking into account the need to identify the flaws and mistakes and work to fix them. This should be considered a strength rather than a weakness. It is always better to face program

problems and difficulties and discuss plans to solve them without the sense of fear of the program getting a bad reputation.

10. Quality assessment must be as much as possible evidence-based and independently verified, as quality judgment should not be based on personal judgments. Performance indicators and benchmarks should be pre-determined and reviewed regularly with independent verification of performance quality, particularly in activities where direct evidence is not available.
11. Promoting diversity, as flexibility in the organizational arrangements of the program is a necessity for the program to be able to meet the different needs of the community it serves and to help it achieve its mission and goals.
12. The need to involve stakeholders primarily in planning and evaluation processes while obtaining different observations and perspectives continuously. This involves analyzing and interacting with them and, most importantly, having their point of view taken into account to activate the quality assurance system. The stakeholders in the program are students, graduates, instructors, staff, employers, community members benefiting from the program, and any other group associated with the program.
13. The program's full commitment that quality development is achieved through effective leadership and the broad participation of faculty and staff in performance evaluation and development plans.

Sixth: Internal procedures to ensure the quality of the program

It is primarily the responsibility of the Department of Industrial Engineering to ensure that the QEM program achieves and maintains a high level of quality by using the following internal procedures:

1. For newly established programs, the quality assurance system must be integrated into its development plans so that the plans for the quality system include quality control and development, the effectiveness of the services and activities provided, as well as the quality and effectiveness of its various committees.
2. For existing programs, quality assurance procedures must be fully integrated into all their activities and practices. It should include leadership, coordination, evaluation, and development of quality procedures based on the mission and goals of the program, preparation for planning, and reporting. The implementation of such procedures should be carried out through an annual course of action involving planning, monitoring, and evaluation. Periodic self assessments must also be carried out.
3. For existing programs which do not have a quality system, the internal quality assurance arrangements usually begin with the establishment of a quality committee that must perform the first self-evaluation, which is the starting point for planning and evaluating quality assurance processes.
4. One of the responsibilities of the program to ensure its quality is to evaluate itself by appropriate standards derived from external appropriate standards or benchmark standards. Those standards and points may be represented by the Authority's reference standards, or in the standards of excellence in the performance of corresponding programs within and outside the Kingdom of Saudi Arabia, or the

opinions of independent arbitrators with experience in university education. The programs can use the standards of international institutions specialized in academic accreditation in this regard. The Education and Training Assessment Authority is part of the arrangements made by the program to ensure quality. Although the standards issued by this external institution may be considered as an external evaluation, it is considered according to the Education and Training Evaluation commission as a part of the program plans for quality assurance. This is considered as an internal act according to fulfill the goals of thesystem of assurance of the Kingdom of Saudi Arabia.

Seventh: Components of the quality assurance aystem of the program

The following are the principle components of the QEM program's quality assurance system.

1. Inputs: The quality assurance system inputs for the program include:
    a) Support for the scientific department that runs the program and the participation of faculty members.
    b) Regulations, bylaws, and circulars of the Ministry of Education.
    c) Requirements of the National Center for Evaluation and Academic Accreditation.
    d) Programs and their self-studies.
    e) Program follow-up reports and quality systems work on the various committees in the department that manages the program.
    f) Performance indicators measurement reports.
    g) Benchmarks data, information, and reference points systems.
2. Operations: The program's quality assurance system processes include:
    a) Building operational plans for the program.
    b) Completing the forms and documents of the design of the program.
    c) Completing the course design forms and documents.
    d) Designing mechanisms and forms for follow-up and evaluation.
    e) Following up and evaluating the performance of the different committees in the section and the program.
    f) Developing and documenting appropriate databases for quality processes.
    g) Developing operational plans to ensure and improve the quality of the program based on the planning and review course form of the National Center for Evaluation and Academic Accreditation taking into account its integration with the program's operational plan.
3. Outcomes: The results of the quality assurance system for the program consist of:
    a) Report on the completion of the operational plan of the program.
    b) Program design forms.
    c) Program review and evaluation forms.

d) National Certification certificate from the National Center for Evaluation and Academic Accreditation.

e) International certification from international accreditation centers and institutions**.**

f) Reports indicating improving the quality of program performance.

Second Axis: Program Quality Design

First: Program design guides

The design of the QEM program was centered around the following essential elements:

1. The Kingdom's Vision 2030 which seeks to make education in the Kingdom of Saudi Arabia a leading model.
2. Absolute support for the State's directions and development policy in diversifying the tributaries of the economy, and a smooth transition through the channels of higher education to a knowledge economy based on improved learning outcomes that ensure global competitiveness.
3. Building the human personality of the graduate by developing his/her abilities, skills and performance through caring for him/her psychologically, physically, and intellectually. This care reflects on his/her performance, self-confidence, and ability to develop himself/herself and manage crises.
4. Promoting the concept of work ethic by linking it to the power, leadership, and ability to make the future. This is achieved through the consolidation of efficiency factors as a basis for competitiveness and ensuring equal opportunities.
5. Starting from where the others ended up in scientific leadership, benefiting from the experiences of world-renowned academic institutions based on national identity.
6. Social participation by aligning learning outcomes with the needs of the labor market.

Second: Principles of program design:

The program is design according to certain priciples as identified in Table 1.

Table 1: Principles of QEM Program Design

No.	Principles
1	**Based on the kingdom's education policy and its established reference foundations.**
1-1	The program and the study plan reflect the principles and provisions of the Islamic faith.
1-2	Supports the kingdom's governance policies.
2	**Integration of the goals of the program with the goals of the Ministry of Education, the goals of the University and its plan, and the requirements of the local culture.**
2-1	The goals of the program and the study plan are built on the goals of the Ministry

No.	Principles
	of Education about higher education.
2-2	The goals of the program and the study plan reflect the University's strategic plan.
2-3	The goals of the program and the study plan focus on all components of the University's strategic plan.
2-4	The goals of the program and the operational plan take into account the relative weights of the University's strategic plan.
3	**Integrating the academic goals of the program with the needs and requirements of the labor market.**
3-1	Reflects the goals of the program and the study plan with the needs of the labor market.
3-2	Program goals are included in knowledge skills aspects.
3-3	The goals of the program and the study plan focused on addressing problems that already exist in the labor market.
4	**Based on a strategic vision of the program, that emphasizes scientific excellence and credibility. Then starting from it to accomplish tasks.**
4-1	There is a specific vision of the program reflected in the goals.
4-2	The program's vision is clear and applicable.
4-3	The program's vision reflects excellence and quality.
4-4	The program's vision stems from the vision of the college and the University, as well as from the challenges and opportunities of reality.
5	**Integration and constructive coordination with other programs within the college and the University colleges at the level of vision, inclusiveness, and depth.**
5-1	Integrating program goals with other program goals of the college.
5-2	The program's goals are balanced with other programs of the college.
5-3	Integration of program goals and its balance with the goals of equivalent programs at other colleges at the University.

Third: Specifications of a good program

The university seeks to improve all its programs towards guidance and excellence because the goal of designing a good study program is to produce learning experts not experts in passing exams. This is a major challenge because many programs face the challenge of fragmenting knowledge which loses the student's growing educational experience. As students may get knowledge and skills, while applying in their course, but they are exposed to very limited opportunities to integrate the two, and through this and other cumulative experiences the specifications of the good course can be summarized at the following points, while explaining how to ascertain these specifications individually:

Table 2: Specifications of a good program

No.	Specifications of a good program	Verification tool of the availability of specifications	The responsible authority of checking the availability of specifications
1	Compatibility of the program's vision, mission, and goals with the vision and mission of the college and the University.	• A questionnaire to identify the vision, mission, and goals of the program. • A matrix corresponds to the vision, mission, and goals of the program with the vision, mission, and goals of the college and the University.	• Faculty and students • Program or College Internal Review Committee. • Advisory Committee of the Program. • Deanship of Quality & Development.
2	It is important to start first by defining the specifications of the graduate and the outcomes of learning before proposing courses.	• A questionnaire to determine the characteristics of graduates of the program. • A questionnaire to identify the learning outcomes of the program. • A form of a program description review.	• Consultancy Committee of the Program. • Deanship of Quality & Development.
3	There is no deficiency in the expected knowledge outcome of the graduate.	A form of external review of the program (a clear and accurate identification of the required knowledge).	The external auditor of the program.
4	No repetition of the contents of the submitted courses .	• A form of course content analysis. • A form of examining the names and roles of participating Faculty at all stages of the program design. • A form of the program matrix examination.	• Faculty of the program. • Program or College Internal auditing committee. • Deanship of Quality & Development.
5	Determine the number of credit hours to meet the needs of each course.	• Amatrix reference comparison with corresponding programs. • Internal and external review reports of the program.	• Faculty o the program. • Deanship of Quality & Development. • Internal and external arbitrator.
6	Choose teaching and evaluation methods	• A form o program description review.	• Faculty and students. • Program or college

No.	Specifications of a good program	Verification tool of the availability of specifications	The responsible authority of checking the availability of specifications
	appropriate to the nature of courses.	• A form of course description review. • A questionnaire course evaluation . • Internal and external review reports of the program.	internal review committee. • Deanship of Quality & Development. • Internal and external arbitrator.
7	Courses are linked to each another and sequenced .	• A form o program matrix Examination. • Internal and external review reports of the program.	• Faculty of the program. • Consultancy Committee of the Program. • Internal and external arbitrator.
8	Identify the required skills accurately.	• an opinion poll on the specification of graduates. • An opinion poll on the targeted learning outcomes. • Internal and external review reports of the program.	• Faculty and students. • Advisory committee of the program . • Deanship of Quality & Development. • Internal and external arbitrator.
9	Availability of a variety of learning sources.	• A questionnaire to identify the satisfaction with the sources of learning available in the program. • A questionnaire of evaluation to identify the library performance. • A form reviewing both the program and the course. • A form of satisfaction of learning System by using the Blackboard.	• Faculty and students of the program. • Deanship of Quality & Development. • Deanship of Information Technology & E-learning.
10	Quality and adequacy of training and field expertise.	• A form of field experience report review . • A questionnaire about the field experience evaluation.	• Facultyand students of the program. • Deanship of Quality & Development.

Fourth: Standards of Program Quality Design

The QEM's Program Quality Design follows certain standards as outlined below.

1. It should focus on theoretical and applied scientific aspects and skills development highlighting scientific facts and their role in developing students' abilities to interact

positively based on thinking, assimilation, and participation to create a creative environment, and achieve depth in specialization with the diversity of knowledge fields.

2. To present the scientific material to the courses in the language in which the courses are taught.
3. The study plan should be able to refine and develop the student's research skills through the completion of theoretical and applied research as well as the presence of field training according to the college and specialization.
4. Courses should be distributed at the levels. The minimum and highest units for each course should be determined, and the total number of graduation units as a whole, according to the Document of the National Framework for Qualifications for Higher Education in Saudi Arabia.
5. To avoid duplication of courses in the study plan with other plans at the college or university when preparing the plan.
6. A survey should be conducted using benchmarking of at least three study plans for similar departments at universities or colleges with academic accreditation, or a good reputation for study plans and programs to be developed or established.
7. The study plan should be evaluated by specialists belonging to internal and external scientific institutions which are distinguished by their programs and plans.
8. Compliance with the requirements of the National Qualifications Framework 2020 due to:

    a) Extra moral or fundamental courses should not be counted within the approved hours of the program.

    b) The student's entire regular academic load per semester is from fifteen (15) to eighteen (18) credit hours at most.

    c) Minimum hours of credit should be one hundred and twenty (120) hours for a four-year university degree.

    d) The program's specific learning goals include learning outcomes in all areas of learning (knowledge and understanding - skills - values)

    e) The expected program learning outcomes should be compatible with both (knowledge and understanding field - skills - values field)

    f) Distributing responsibility for achieving these learning outcomes through the courses included in the program appropriately and including them in the goals of the courses.

    g) Program description and courses description should include appropriate teaching methods and student activities for learning outcomes in each area.

    h) Tests and other types of evaluation should include appropriate forms of learning evaluation for each learning area.

    i) Special care should be applied to learning outcomes in each area of learning in program evaluation, including student, graduate, employer, or other evaluation mechanisms.

j) Consistency of levels achieved in each area of learning with the specifications of graduates' characteristics and specifications of learning outcomes for each level of qualifications.

9. To adhere to national and international academic quality and accreditation standards in the preparation of plans.
10. The courses should be numbered by a unified system within the department and college ensuring the sequence of courses, determining the need for any prerequisite or prerequisites. It is preferred to minimize prerequisites as much as possible.
11. Numbering courses according to a unified system within the department and college.
12. The number of credit hours per theoretical course should be at least three credit hours and two credit hours for the practical course. Colleges that go beyond that must justify the reasons for the overrun.
13. Courses should be distributed on at least eight levels none of which is below the minimum of twelve (12) units of study for each level.
14. Ensure no duplication of courses within the college.
15. The following standards when formulating the learning outcomes of the program should be taken into account:

a) Learning outcomes should include skills provided in the documents of the National Center for Evaluation and Academic Accreditation, and the National Qualifications Framework. These are:

- Knowledge and understanding,
- Skills: cognitive, practical and physical, and communication & ICT, and
- Values, autonomy and responsibility: values & ethics, and autonomy & responsibility.

b) Accurately describe these skills to ensure that they serve well the learning outcomes.

c) Skills are therefore always required to be measurable using appropriate learning and teaching strategies. In programs related to psychomotor skills, those special skills should be identified regarding the requirements of graduates.

d) Expected learning outcomes are based on a wide range of sources of information when conducting studies related to the field of students' speciality or vocational disciplines: they need to be validated and correct conclusions reached.

e) Emphasizing that the main objective of determining learning outcomes is to ensure that graduates will not only perform the things identified but also will do them in their personal and professional lives automatically, whenever it is appropriate.

f) Learning outcomes are formulated with the participation of academic experts, professionals, employers, targeted graduates, and students. It takes into account the following:

g) Learning outcomes is a pre-decision before designing the courses in the underlying structure on which courses are selected.

h) Align these outcomes with the program's mission, the insights and the missions of its sponsors, and review those outcomes with each update of the visions and mission referred to.

i) Achieving learning outcomes in all program courses. Not all outcomes are required to be achieved in a single course, but rather in the collection of all courses.

j) Skills should be accurately identified and scientifically formulated taking into account educational origins and modern theories in learning and education.

k) Develop appropriate teaching strategies to achieve the desired outcomes of the educational process.

l) Emphasize that the evaluation should not be limited to cognitive aspects, but varies according to the skill and the teaching strategy.

Fifth: Program designing stages

A program's design process goes through several stages, which are shown below.

First Phase: Preparation

It includes:

1. **Finding out the actual needs of employers and the surrounding community by:**
   a) Identify who can benefit from this speciality.
   b) To find out the point of view of employers in the graduate's specifications through interviews, workshops, or questionnaires.
   c) Drafting the graduate's specifications in their final form.
   d) Benefit from the national qualifications framework about the specifications of graduates, learning outcomes, and the number of credit hours of the approved program.
   e) Choose a reference benchmark from one of the accredited universities providing a formal agreement between the officials of the two universities.
   f) Drafting the expected learning outcomes of the program in its final form in the light of the national framework of qualifications, reference benchmark, and graduate specifications.
   g) Prepare a report on this phase.

2. **Information survey of the experiences of other universities, both national and international.**

   When creating or developing any program, a survey of at least three similar study programs from universities or colleges with academic accreditation, or extensive experience in the field of the program should be done. Similar programs should be selected from universities or colleges from different universities of the world e.g. (from America, Europe, Japan, Australia, East Asia, Arab and Gulf countries, and from within the Kingdom of Saudi Arabia).

   The approach to the survey mechanism for similar programs follows the following stages:

Step 1: A general study of all similar programs, which intends to:

a) Find out how many courses and credit hours are approved for similar programs.

b) How to distribute units of the credit hours depending on university requirements, college requirements, and specialization requirements.

c) Number of courses in each program and their distribution.

d) Learn how to include the technical and the skills aspect of the program (if any)

e) Prepare a report on the work of this phase in each program

Step 2: Comparison and balance the programs studied in the first phase and the balance includes:

a) Comparison and balancing the number of units in the compared programs and distributing them to the requirements of the program.

b) Balancing the number of courses in similar programs, and how they are distributed to University, college, and specialization requirements

c) Prepare a report that includes the results of the comparison and balance of similar programs.

Step 3: Comparison and balance elements of the program concerning scientific content, technical and skills part of the whole content. This covers the following:

a) Study the accurate description of the contents of scientific courses in similar programs surveyed in the first phase to determine how to integrate the technical and research aspect with scientific content.

b) Apply the results of the previous paragraph (1) to all the scientific courses proposed in the program taking into account the results of the second phase.

c) Use the vision of beneficiaries (government or private) from the outcomes of programs provided to them in knowing the skills they need in the graduate within a specific and fast-resulting mechanism.

3. Formulating the basics of the program

The basic elements of the program are:

a) Select the name of the program and its distinctive code.

b) Formulate the vision, mission, and goals of the program.

c) Adopt or prepare academic standards in which targeted learning outcomes are formulated.

d) Build a preliminary list of the specifications of graduates of the program.

e) Draft a preliminary list of targeted learning outcomes for the program.

f) Determine the number of hours approved for the program.

g) Distribute the number of hours and units according to the requirements of the University, College, and specialization

h) Determine the number of years of the program.

i) Determine the requirements for passing the program.

j) Prepare a report concerning this phase.

Second Phase: Information analysis

The information analysis includes:

1. Preparing a matrix to identify consistency in learning outcomes between the national qualification's framework and reference benchmark, and the proposed learning outcomes of the program.
2. Preparing the program matrix

Third Phase: Final design of the program study plan

In this phase, the design of the program study plan is finalized and consists of:

1. Distribution of the courses of the program's study plan at the proposed levels of study taking into account the requirements of the courses and their scientific and logical sequence.
2. Identify appropriate training courses to develop the student's skills to contribute to his/her preparation for the labor market.
3. Final review of the program study plan from the department
4. Present the program's study plan to experts (arbitrators) specializing in the program in order to evaluate it and perform appropriate modifications if need be. In case of external arbitration, the approval of the Deanship of Quality and Development at the University of Hail is needed.
5. Prepare the program description according to the latest form of the National Authority.
6. Prepare a brief description of all program courses, and field experience (if any).
7. Fill in the form of creating a new program issued by the Deanship of Quality and Development.
8. Adoption of the plan at the level of the department, college, and Deanship of Quality and Development, to ensure that the requirements of academic accreditation, the Permanent Committee of Plans and The Study System, and the University Council, and submit it to the National Center for Evaluation and Academic Accreditation, to review its compatibility with its standards.

Fourth Phase: Administrative and regular procedures for the approval of the program

The administrative and regular procedures for the approval of the program consist of:

1. Obtaining documents (mechanisms - forms) for the preparation and design of the program from the Permanent Committee of Plans and Study System at the university.
2. Approval of the program at the department.
3. Contacting the Permanent Committee of Plans and Study System (PSSC), and the Academic Accreditation Committee at the College to ensure that the program complies with academic accreditation requirements.
4. Approval of the program by the College Committee.

5. Submitting complete documents of program design with annexes to the Deanship of Quality & Development to review.
6. The Deanship of Quality and Development refers the program to the Program & Plans Committee when it is completed, or returns it to the college in case there are substantial observations.

Fifth Phase: Program final review

All program design documents are to be submitted to the Planning & Study System Committee at the University-level. In turn, the PSSC reviews them and ensures that they meet all the requirements, and submits them to the University Council for final adoption. They are then sent to the Higher Education Council for approval by ministerial decision. At that point enrolling students in the program can begin.

Sixth Phase: Program evaluation:

The program is evaluated continuously and annually. This is the responsibility of the scientific department. It is achieved through:

1. Annual program reports which include various mechanisms for evaluating the activities and practices of the program and a set of benchmarks by which the development of the program can be evaluated.
2. Course reports.
3. Field experience report.
4. Opinion poll of students, graduates, and employers.
5. Other studies, reports, or social and scientific changes that may affect the program.
6. The program is reviewed every 5 years according to the program's accreditation cycle. Take advantage of their results to plan the development of the program. Documentation with evidence of the previous steps.

The program evaluation procedure is summarized in Figure 1.

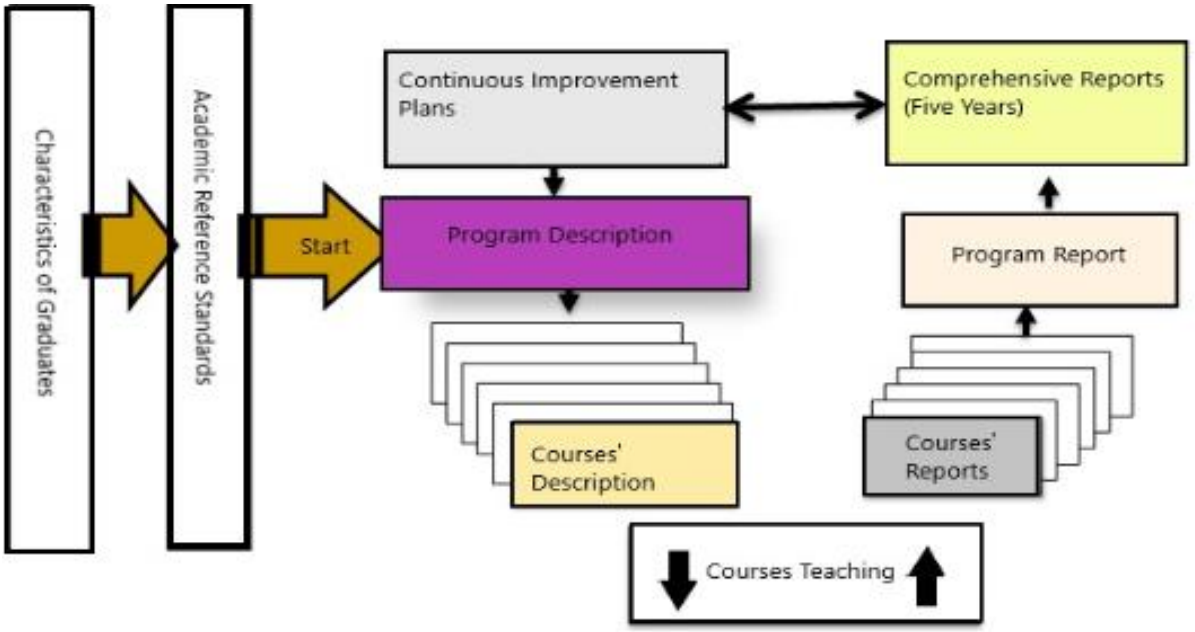

Figure 1: Diagram showing the program evaluation procedure.

Sixth: Highlights of the program quality assurance system related to the quality of the program design (Master in Quality Engineering and Management)

Program creation

The postgraduate program of Quality in Engineering and Management (QEM) started in the academic year 2015- 2016 in the Department of Industrial Engineering in the College of Engineering at the University of Hail.

Program Vision

The vision of the master in Quality Engineering and Management is to achieve national and regional leadership in knowledge dissemination, research excellence, and sustainable community partnerships in the areas of Quality Engineering and Management.

Program Mission

Prepare qualified professionals and excellence leaders in quality engineering and management through quality teaching using modern technologies and tools, engage in scientific research and provide sustainable community services

Program Goals

The QEM program has was established with the following goals:

1) Prepare experts and leaders in quality engineering and management.
2) Engage in research activities related to quality engineering and management.
3) Disseminate the culture and importance quality of products and services in the community at large.

4) Perform tasks with a high level of professionalism, ethical values and social responsibility

The Organizational structure of the program

Operational plan of the program

Specifications of program graduates

Graduates of the Master in Quality Engineering and Management are expected to have the following attributes:

1) The ability to plan and design effective quality management / quality improvement systems in various types of industries and services.
2) Strive for continuous improvement of products and services that meet customers' needs and expectations.
3) The ability and skills to collect, analyze and evaluate information and ideas and to solve problems by thinking clearly, critically and creatively using established methods of enquiry.
4) The ability to communicate effectively and appropriately in various contexts.
5) The ability to learn independently and continuously in order to keep pace with developments in their field of expertise.
6) Work with a high degree of professionalism and commit to ethics and ethical standards in personal, social, business and professional contexts.
7) Have the capacity to relate to, collaborate with, and, where appropriate lead others, and to exchange views and ideas in order to achieve desired outcomes through teamwork, negotiation, conflict resolution, and leadership.

Targeted learning outcomes for the program

The program learning outcomes (PLOs) of the QEM program are aligned with the learning domains of the 2020 National Qualifications Framework for Saudi Arabia (NQF-KSA) at level 7 (Master's degree or equivalent). The learning domains are: Knowledge and Understanding, Skills (Cognitive, Practical and Physical, and Communication & ICT), and Values, Autonomy and Responsibility (Values & Ethics, and Autonomy & Responsibility). Table 3 lists the PLOs for the QEM program.

Table 3: QEM PLOs

Program Learning Outcomes	
Knowledge and Understanding:	
K1	Describe the general theories, methods, principles and tools employed in quality engineering and management.
K2	Define the fundamental concepts, including those based on national and

	international standards, of business excellence, innovation, creativity in the field of quality engineering and management.
Skills:	
S1	Apply advanced statistical and analytical techniques, including software tools, to design, implement and monitor quality management systems based on national and international standards of excellence.
S2	Demonstrate problem-solving skills in order to be able to make informed decisions based on quality data analysis, risk assessment, and cost-benefit analysis in complex engineering and management context.
S3	Conduct research, think critically, and innovate in the field of quality engineering and management, contributing to the advancement of the profession.
S4	Exhibit effective verbal and written communication skills.
Values, Autonomy, and Responsibility:	
V1	Demonstrate ethical and professional responsibilities in engineering and management situations within a global and societal context.
V2	Show the characteristics of interdisciplinary collaboration, teamwork, and leadership.

List of job names for QEM program graduates

The professions and jobs for which QEM graduates are qualified for include:

- Quality Manager
- Business Excellence Manager
- Quality Auditor
- Quality Control Supervisor / Manager
- Quality Assurance Supervisor / Manager
- Quality Analyst

Furthermore, the QEM graduates can work in different public and private sectors such as:

- Public and private manufacturing sectors.
- Public sectors: hospitals, government entities and organizations.
- Organizations responsible for food safety inspection.
- Organizations responsible for quality for occupational health and safety.
- Services sectors.
- Organizations responsible for setting up quality standards.

Consistency Matrix with the requirements of the National Qualifications Framework

The learning outcomes of the QEM program are consistent with the requirements of Saudi NQF (NQF-KSA), version 2020 as shown in Table 4.

Table 4: Matrix showing the consistency of the QEM PLOs with NQF requirements.

Code	Program Learning Outcomes (PLOs)	NQF Level Descriptors of Learning Outcomes – Level 7
1	**Knowledge and understanding**	
1.1	Describe the general theories, methods, principles and tools employed in quality engineering and management.	In-depth and specialized body of knowledge and understanding covering theories, principles, and concepts in main areas of a discipline, profession, or field of work.
1.2	Define the fundamental concepts, including those based on national and international standards, of business excellence, innovation, creativity in the field of quality engineering and management.	Critical knowledge and understanding of processes, material, techniques, practices, conventions, and/or terminology relevant to a certain discipline, profession, or field of work.
2	**Skills**	
2.1	Apply advanced statistical and analytical techniques, including software tools, to design, implement and monitor quality management systems based on national and international standards of excellence.	Apply specialized theories, principles, and concepts in advanced contexts in a discipline, profession, or field of work.
2.2	Demonstrate problem-solving skills in order to be able to make informed decisions based on quality data analysis, risk assessment, and cost-benefit analysis in complex engineering and management context.	Solve problems in complex and advanced contexts in a discipline, profession, or field of work.
2.3	Conduct research, think critically, and innovate in the field of quality engineering and management, contributing to the advancement of the profession.	Conduct advanced research or professional projects using specialized research and enquiry methodologies in a discipline, profession, or field of work.
2.4	Exhibit effective verbal and written communication skills.	Communicate in various forms to disseminate knowledge**,** skills, research results, and innovations related to a discipline or filed of work to specialist and non-specialist audiences.
3	**Values, Autonomy and Responsibility**	
3.1	Demonstrate ethical and professional responsibilities in engineering and management situations within a global and societal context.	Demonstrate integrity and professional and academic values when dealing with various issues.

Code	Program Learning Outcomes (PLOs)	NQF Level Descriptors of Learning Outcomes – Level 7
3.2	Show the characteristics of interdisciplinary collaboration, teamwork, and leadership.	Effectively collaborate and participate in research or professional projects or groups, undertake leadership roles, and take high responsibility of the work.

Program matrix

The learning outcomes for all courses of the QEM program have been mapped with the program PLOs as illustrated in the matrix in Table 5.

Table 5: Matrix showing the mapping of all QEM courses with the PLOs.

Course code & No.	Program Learning Outcomes							
	Knowledge and understanding		Skills				Values, Autonomy, and Responsibility	
	K1	K2	S1	S2	S3	S4	V1	V2
QEM 511	I		I	I		I		I
QEM 512	I		I	I				I
QEM 515	I	I	I			I		I
QEM 517	I	I		I	I		I	I
QEM 513	P		P	P				P
QEM 627	I	I		I			I	
QEM 621	P	P	P	P			P	P
QEM 518	P	P		P			P	
QEM 623		P				P	P	P
QEM 624	P		P	P				P
QEM 625	M	M	M		M	M	M	M
QEM 626	M		M	M			M	
QEM 602		M		M	M	M	M	M
QEM 600	M	M	M	M	M	M	M	M

Program description.

The master program in Quality Engineering and Management (QEM) spanned over a period of 2 years. It is a combination of interdisciplinary engineering and management topics of actual importance to businesses operating in competitive environments and disruptive social and economic contexts. This program is created for professionals who wish to acquire a competitive edge in a wide variety of public and private industries and

service organizations. The student in this program will be equipped with Knowledge, Skills, Abilities and Values that focus heavily on quality engineering topics and technical knowledge on management and their implementation in Saudi organizations. The program courses cover a wide range of topics including total quality management, project management, six sigma methodology, systems engineering, creativity and innovation management, and metrology together with research methods and applied statistics

The description of the program is one of the forms of the National Center for Evaluation and Academic Accreditation. It has been adopted by the University of Ha'il as one of the pillars of its program quality course. The main objective of the program description is to support its planning, monitoring, and development by its implementers. These descriptions should include information indicating that the program will meet accreditation requirements, as well as its use as a guide for the program's faculty.

The program description includes general descriptive information on the program, focusing on the expected learning outcomes of students, teaching methods, and student evaluation strategies to ensure that they have acquired learning outcomes in the various areas of learning included in the national qualification's framework. The focus should be on the whole program to be seen as an integrated package of learning experiences that are presented through many courses. The program description comprises ongoing plans to evaluate its benefits and plan its development procedures.

The following points were taken into account when completing the program description:

1. Use the latest version of the form certified by the National Center for Evaluation and Academic Accreditation.
2. Complete all elements of the form for both parts at the headquarters and all branches that belong to the programs.
3. The form should be the same for both parts at the headquarters and all branches that teach the program.
4. Permanent obligation to description once it is completed. This does not prevent modifications from time to time as a result of renewed experiments or changing circumstances.
5. Logical sequence when formulating the description of the program by developing the program's mission and its broad goals, then reviewing examples of equivalent programs, then considering any special requirements for this particular program. Finally starting to characterize the program using the latest form of the program description issued by the National Center for Evaluation and Academic Accreditation.
6. Formulate a matrix of learning outcomes at the program level. Distribute the content of the matrix appropriately to program courses at all levels. This is then should be discussed at a meeting of all faculty members of the program.
7. Complete the required information in each part of the form in detail to deliver it clearly to all faculty members participating in the program.

Program performance indicators

Table 6: Key Performance Indicators for the QEM program

No	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-PG-1	Percentage of achieved indicators of the program operational plan objectives	90% (75)	Rubrics, CLOs, PLOs achievements	End of the second semester
2	KPI-PG-2	Students' Evaluation of quality of learning experience in the program	4.5 (out of 5)	CES, PES, SES surveys	During Semester 2
3	KPI-PG-3	Students' evaluation of the quality of the courses	4.2 (out of 5)	CES, PES, SES surveys	During Semester 2
4	KPI-PG-4	Students' evaluation of the quality of scientific supervision	4.75 (out of 5)	CES, PES, SES surveys	During Semester 2 of the second year just before graduating
5	KPI-PG-5	Average time for students' graduation	4 (out of 5)	90% of students who successfully completed all required courses within 4 semesters	End of Semester 2 of second year
6	KPI-PG-6	Rate of students dropping out of the program	0%	Number of students dropping out from the program end of 1st year	During Semester 2
7	KPI-PG-7	Graduates' employability	100%	Alumni surveys Employer surveys	During Semester 2
8	KPI-PG-8	Employers' evaluation of the program graduates'	4.25 (out of 5)	Employer surveys	Every 2 years

No	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		competency			
9	KPI-PG-9	Students' satisfaction with the provided services	4.2 (out 0f 5)	PES, SES surveys	Every Semester
10	KPI-PG-10	Ratio of students to faculty members	5 to 1	Ratio of the number students to that of faculty members	Every semester
11	KPI-PG-11	Percentage of faculty members' distribution based on academic ranking	NA	Number of faculty members with different ranks	End of year
12	KPI-PG-12	Proportion of faculty members leaving the program	0%	Number of teaching staff leaving the program	End of year
13	KPI-PG-13	Satisfaction of beneficiaries with learning resources	4 (out of 5)	CES, PES, SES, surveys	End of year
14	KPI-PG-14	Satisfaction of beneficiaries with research facilities and equipment	4.2 (out of 5)	CES, PES, SES, surveys	End of year
15	KPI-PG-15	Percentage of publications of faculty members	100%	Number of faculty members who published peer-reviewed papers	End of year
16	KPI-PG-16	Rate of published research per faculty member	4 to 1	Number of publications to the number of faculty members. Number of	End of semester 2

No	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
				faculty member	
17	KPI-PG-17	Citations rate in refereed journals per faculty member	30 to 1	Average number of citations to the number of faculty members (from ResearchGate)	End of semester 2
18	KPI-PG-18	Percentage of students' publication	NA	Number of publications made by program students	End of semester 2
19	KPI-PG-19	Number of patents, innovative products, and awards of excellence.	NA	Number of patents, innovative products, and awards of excellence awarded to or produced by students and/or faculty members	End of each year

Program course descriptions

Faculty members have prepared a set of descriptions for each course in the program's study plan to clarify the details of the course plan as part of an upstream procedure package to achieve learning outcomes expected for the program as a whole.

Course descriptions include the knowledge and skills to be developed by students. This done in line with the “National Framework for Qualifications" document as well as the teaching and evaluation strategies (in full detail guiding all teachers) with the need for course-level learning outcomes to be consistent with teaching strategies and teaching methods.

Program course reports

At the end of each semester or year in which a course is taught (depending on the course period), each instructor prepares a summary report on the course to be presented to the program coordinator. A copy of the course description should be attached as part of the course file for consideration when reviewing the program.

Program report

The program coordinator prepares an annual report on the program by the end of each year after considering course reports and other sources of information on the effectiveness of the program's implementation. The paragraph of the action plan of the annual program report sets out specific improvement priorities and important issues that should be closely monitored on an ongoing basis. Those issues must be included in the annual report.

The program's annual report on the quality of the program is evidence-based. The discussion of evidence in the Program Description Form includes a special paragraph for program administrators to review the direct measurement of learning outcomes at the program level. It should be, in compliance with the National Centre's recommendation that is one to three educational outcomes should be measured each year during a five-year course. This will enable program administrators to measure directly all learning outcomes at the program level during this time cycle.

It should be noted that the program has put appropriate procedures to ensure that Program Reports and Courses Reports are accomplished as soon as possible. So that any necessary responses can be implemented without undue delay. The program coordinator also provides copies of the annual report of the program to the Dean of the College or the head of the department in charge of the program as well as to the Deanship of Quality & Development.

Also, the program is keen to provide annual information on the key performance indicators of the program to enable the High-Quality Committee and other relevant committees to monitor the quality of programs. The performance indicators at all levels should include the specific performance indicators required by the National Center. In addition to any added indicators identified by the program to follow up on performance or follow up on the progress of quality initiatives.

Third Axis: Program quality of courses design

This is done by selecting the necessary course elements and units, which the student must study. These topics are then grouped according to their convergence, interdependence, and complementarity. Then give the course a suitable name, give these topics the appropriate weight in terms of the number of hours adopted, the hours of communication, the need for practical hours, the cognitive topics that the student must know after graduation, and identify the contemporary scientific references that include the subjects identified. This method gives us a guarantee that the selection of the course was not based on the preference and brightness of its name, but rather on the identified cognitive content. Thus, we have obtained a balance that preserves the proportionality between the goals and inputs of the program and the outcomes (student). By this, we will make sure that there is no similarity or repetition in the content of the courses in this plan. These are some points that must be taken into account when selecting courses:

- The name and goals of the course, as well as the identification of the study content in which this course can be studied. This should be done in light of the comprehensive and balanced distribution of courses in the program
- Determine the number of credit hours, the number of contact hours, the number of practical hours that suit the size of the courses scientifically and academically.
- Identify the learning outcomes, learning skills of the course, determine the mechanism of measuring and evaluating the student's performance in the course (the continuous and approved evaluation is preferred not only at the lower levels of thinking such as preservation and recollection, but deals with modern methods of evaluation, namely the higher levels of thinking like deduction and application and none traditional methods.
- Identify a distinguished scientific reference that ensures that the student has access to the latest knowledge information in this discipline, and determines the reference books that the student and the course instructor can use separately.

First: Quality standards for formulating course objectives

The Quality Standards for Formulating Course Objectives are presented in Table 7.

Table 7: Quality Standards for Formulating Course Objectives

No.	Standards/benchmark achievement indicators
1	**Integration with the goals and study plan of the program**
1-1	The goals of the course are generally based on the goals of the program.
1-2	The course's goals represent the scientific skills and knowledge to be given to the student in light of the study plan.
1-3	The goals of the course cover all the knowledge and performance skills targeted to be achieved by the student through his/her study of the course.
2	**Linking science to technology.**
2-1	The goals of the course represent the combination of the theoretical knowledge aspect and the technical dimension of this knowledge (in the courses required).
2-2	The course's goals focus on linking theory to application.
2-3	The goals of the course focus on highlighting the role of technology in linking knowledge, industry, and the labor market.
3	**Demonstrate the importance of science on learners' lives**
3-1	The goals of the course focus on highlighting the role of science in modifying the student's behaviour.
3-2	The course's goals focus on the applied aspects of learning.
3-3	The goals of the course are related to the development of the community and the local environment.
4	**Linking goals to problems and projects**
4-1	The goals of the course are linked to the strategic plans of the state and national projects.
4-2	The course's goals lead to how course learning outcomes are applied.
5	**Representing of science characteristics in the field of specialization**
5-1	The goal represent the rooting of knowledge structure.
5-2	The goal is to confirm the cumulative experience.
5-3	The goal emphasizes the logic of science.
5-4	The goal highlights the standards for generalizing theories.
6	**The goals of the course concentrate on developing all aspects of learning of the student**
6-1	The goals of the course focus on developing mental and intellectual aspects.
6-2	The goals of the course focus on developing theoretical knowledge aspects.

No.	Standards/benchmark achievement indicators
6-3	The goals of the course focus on developing social aspects related to peaceful coexistence and acceptance of the other.
6-4	The goals of the course focus on developing applied performance skills.
6-5	The goals of the course focus on developing psychological and moral aspects.
6-6	The goals of the course focus on developing mental and intellectual aspects.
7	**Combining theory with practice**
7-1	Balance of the goals of the course between theoretical and applied aspects
7-2	The goals of the course link learned knowledge with some real-life issues.
7-3	The course's goals emphasize solutions for real problems in the surrounding environment.

Second: Quality standards for formulating course learning outcomes

The quality standards for formulating course learning outcomes are presented in Table 8.

Table 8: Quality standards for formulating course learning outcomes

No.	Standards/benchmark indicators
1	**Compatibility within the goals of the course**
1-1	Learning outcomes are formulated in the light of the objectives.
1-2	Learning outcomes include all theories relevant to the course.
1-3	Learning outcomes contain knowledge and facts relevant to the course.
1-4	Learning outcomes contain concepts and terminology relevant to the course.
2	**Transfer abstract science to practical applications.**
2-1	Provides mechanisms for how to turn abstract facts into practical applications.
2-2	Focuses on highlighting the difference between abstract and theoretical science
2-3	Emphasizes the controls of the application of science.
2-4	Emphasizes the provision of innovative solutions to simplify abstract facts and knowledge. This is achievable through virtual examples and modeling, to bring abstract meanings closer together and clarify them.
3	**Merging the characteristics of science and technology.**
3-1	Focuses on linking science and industry.
3-2	Emphasizes the integration of science and technology.
3-3	links science and technology with the knowledge economy.
4	**Experimenting the scientific knowledge.**
4	Knowledge is classified into theory and experimentation.
4-1	Determines the steps of the experimental approach.

No.	Standards/benchmark indicators
4-2	Emphasizes the principles of the scientific approach in experimentation.
5	**Showing the relationship between scientific knowledge in the course and other knowledge**
5-1	Differentiates scientific knowledge in the course itself.
5-2	Identifies similarities and differences between knowledge and facts
5-3	Scientific in this course and other sciences.
5-4	Highlights the overlap points in the knowledge and facts contained in the course**.**
6	**Interpreting the phenomena to understand the nature of science.**
6-1	Defines the concept of the scientific phenomenon.
6-2	Determines the characteristics of the scientific phenomenon.
6-3	Predicts the fates of the scientific phenomenon.
7	**Highlighting the nature of science relevant to the course by analyzing its history and tracking its development.**
7-1	Shows the characteristics of science
7-2	Highlights the stages of the development of science chronologically
7-3	Illustrates the most important factors in the development of science.
7-4	Discovers the relationship between this science and technical, industrial, or economic progress... etc**.**

Third: Quality standards of course content

The content of each course in the QEM program is created using a set of quality standards as shown in Table 9.

Table 9: Quality Standards of Course Content for QEM Program

No.	Standards/benchmark achievement indicators
1	**Content integration with program goals and predetermined learning outcomes.**
1-1	The content is formulated in light of the objectives of the course.
1-2	The content is formulated in light of the learning goals to be achieved.
1-3	The content covers, in balance, the goals of the course and learning outcomes.
1-4	In the formulation of the content, the relative weights of learning outcomes are taken into account
1-5	Learning and goals should be according to the specification schedule.
1-6	The content is prepared in light of the range and sequence matrix.
2	**The content emphasizes the key scientific concepts in the course which serve other courses in the specialization.**
2-1	The content takes into account the integration in treating the scientific concepts.
2-2	The content takes into account the integration in treating the scientific concepts with other courses.
2-3	The content takes into account the construction of knowledge. It starts from where the content of the previous requirement ended.
2-4	The content illustrates the similarities and differences between different scientific concepts, particularly those addressed through other courses.
3	**Focus on new developments in the field of the course.**
3-1	The content provides the latest scientific developments in this area.
3-2	The new knowledge and facts contained in the course are addressed in detail and clarification in the same way as is done with old knowledge.
3-3	At the end of each semester or lesson in the course, a list of recent references a student may need to enrich his or her knowledge of everything new is attached.
4	**Emphasizing the conversion of new content to the familiar student's knowledge.**
4-1	The content is displayed through modeling and simulation to simplify to the students the new and unfamiliar knowledge.
4-2	The right number of examples, explanations and illustrations are provided to simplify new knowledge to the students.
4-3	Several exercises and activities are offered to encourage the students to provide vital applications for what is new and to apply it in real life or through simulation.

No.	Standards/benchmark achievement indicators
5	**Emphasizing innovative learning by building and organizing content.**
5-1	The content is presented in an analytical generative manner that develops the student's ability to analyze and predict.
5-2	The content is provided through concept maps. The student has the opportunity to complete the deficiencies.
5-3	The content includes fluency-developing exercises and activities.
5-4	The content includes exercises and activities that develop flexibility.
5-5	The content includes training and activities that develop uniqueness.
5-6	The content includes training and activities that develop sensitivity to problems.
5-7	The content includes exercises and activities that develop inquisitiveness.
6	**Emphasizing meaningful learning by inspecting and organizing the content.**
6-1	The content emphasizes the linking of learning with the student's life and his environment
6-2	The content emphasizes the linking learning with the student's life and his surrounding environment
6-3	The content highlights the Knowledge depth of cognitive skills.
6-4	The content emphasizes the applied dimension of the Knowledge aspects.
7	**Respect the student's mentality and meet his/her intellectual and psychological needs.**
7-1	The content is organized in a logical psychological way that takes into account the students' level of thinking.
7-2	The knowledge of content is organized in an integrated sequential manner.
7-3	The organization content takes into account the element of balance.
7-4	The organization of content takes inclusiveness into account.
7-5	The organization of content takes gradient into account.
8	**Linking scientific concepts with the surrounding environment.**
8-1	The content takes into account linking scientific concepts to the elements of the surrounding environment.
8-2	The content provides vital examples of the environment that illustrate the facts and concepts contained in it.
8-3	The content explains some of the surrounding environmental phenomena.
8-4	Content provides solutions to some of the problems in the environment.
9	**Providing the content through educational situations.**
9-1	The content is displayed through dynamic, realistic, or virtual, learnable situations.

No.	Standards/benchmark achievement indicators
9-2	The content focuses on addressing issues and problems through diverse educational situations.
9-3	The content takes into account the logical educational position and all the characteristics of science and the habits of the mind.
10	**Emphasizing the research question skills.**
10-1	The content provides a range of questions and exercises that guide the student to use the library.
10-2	The content refers the students to problems that necessitate the use of scientific research.
10-3	The content provides training and activities that develop the students' discovery skills.

Fourth: Quality standards for building course educational tests

The QEM educational tests for all courses are built using the quality standards presented in Table 10.

Table 10: Quality Standards for Building Course Educational Tests

No.	Standards/benchmark achievement indicators
1	**Integration of tests with the goals and the course learning bylaws.**
1-1	The tests take into account the measurement of goals and course learning outcomes.
1-2	Learning outcomes determine the quality and appropriate forms of testing.
2	**In building test, relative weights of content should be taken into account**
2-1	The test covers learning outcomes according to their relative weights in the course**.**
3	**Measuring the different levels of comprehension.**
3-1	The test measures different levels of comprehension ranging from the traditional level to the level of creative comprehension**.**
3-2	Formulate test vocabulary according to the skills they measure.
3-3	Every single component should measure one skill of comprehension levels**.**
4	**Representing the moderate curve of the student achievement levels.**
4-1	The test is formulated steadily to take into account students' differences**.**
4-2	The results of a good test represent the moderate curve of student achievement levels.
5	**Blending of different forms of tests.**
5-1	The types of tests are varied between (Subjective tests and objective tests).
5-2	Objective tests are diversified (Fill in the blanks - true and falls – multiple-choice questions- matching...) Taking into account the controls of each type**.**
5-3	Subjective Essay tests are mixed between (closed and open ends) taking into account

No.	Standards/benchmark achievement indicators
	their respective controls**.**
6	**Apply the administrative regulations and bylaws in test preparation.**
6-1	Adhere to the Regulations of the Study and Examinations Rules approved by the University
6-2	Provide the right environment for the test submission.
6-3	Notify students of the results of the tests by the determined time.
6-4	The student is granted access to his answer paper if he or she wishes to do so depending on the regulations and bylaws specified in the regulations**.**
7	**Set up a specification table for each test in light of the skills it measures.**
7-1	Set relative weights for all contents of the course.
7-2	Take into account the appropriate weight of the content, objective, or learning outcome that needed to be measured in the test.
7-3	Make sure that the test represents the real relative weights in the course to measure the extent to which the goals are achieved.
8	**Taking into account the balance and integration with tests in other courses at the college.**
8-1	Coordinates with other course instructors regarding the mechanism and controls of tests**.**
8-2	The test should be among the mechanisms adopted in the program**.**
8-3	The test is integrated with the tests in other courses in the program in terms of form and content

Fifth: Procedures for course implementation

The procedures for course implementation are:

1. Determine the goals of the course.
2. Determine the learning outcomes of the course.
3. Prepare the description of the course.
4. Teach the course inside the classroom.
5. Announce the description of the course in the first lecture.
6. Provide systematic curricular and extra-curricular activities to enrich study subjects.
7. Activate classroom discussions during lectures.
8. Diversify teaching methods to provide the vocabulary of the course to suit the nature of the course learning outcomes.
9. Students present relevant presentations in front of their colleagues.
10. Use a variety of assessment methods to suit the target learning outcomes of the course as well as the scientific content of the course.

11. Prepare the theoretical exam paper according to quality standards.
12. Check students' grades in more than one way.
13. Return test answer sheets to students.
14. Discuss students' answers after marking the test (at least in monthly and midterm tests)
15. Evaluate the course by faculty, students, internal and external reviewers.
16. Prepare the course report.
17. Take corrective actions according to the results of the course evaluation.

Fourth Axis: Program course quality of review and evaluation

First: Concept of reviewing and evaluating the course

The course evaluation and review process is defined as a systematic and regular review and evaluation of all components and activities of the course according to the developments and results of the evaluation.

Second: Overall goals of reviewing and evaluating the course

The evaluation and review process of the course aims to identify the extent to which the course achieves its goals and learning outcomes and ensure its effectiveness. Hence the evaluation and periodic review of the course are necessary to ensure its development and improvement and to verify it is keeping up with all developments in the field of specialization.

Third: Course review and evaluation standards

The course review is performed according to the following rules.

1. The periodic evaluation and review of the course should be conducted annually if necessary.
2. The tools used in the course evaluation process should vary and not be limited to one type.
3. Relying on documented evidence and avoiding personal opinions and impressions.
4. The evaluation process should go hand in hand with the teaching and learning process to ensure that the effectiveness of the course is constantly monitored, and that points of strength and weakness are identified.
5. The course should be reviewed and evaluated by students, faculty and experienced specialists.

Fourth: Mechanism for reviewing and evaluating the course

College-level Course review and evaluation procedures

The review and evaluation of courses at the college level proceed as follows:

1. Form an internal review committee at the college level according to clear and specific standards. The committee will carry out several tasks including reviewing the course file and its various contents the most prominent of which are course descriptions and course reports.

2. Carry out internal and external reviews of the course.
3. Conduct different course evaluation surveys the most important ones are:
    a) Course evaluation survey (CES).
    b) Faculty evaluation survey (FES)
4. Discuss the results of the course review at the level of the governing committees and councils.
5. Governing councils make decisions according to the results of the review and evaluation of decisions (Course Quality Loop).

Procedures for reviewing and evaluating the course at the Deanship of Quality & Development

After being reviewed and evaluated at the College level, the courses are reviewed and assessed by the University's Deanship of Quality and Develeopment (DQD) in accordance with particular procedures as outlined below.

1. Review the course file through scheduled semester visits including:

a) Review the goals of the course.

b) Review the target learning outcomes of the course.

c) Review the description of the course.

d) Review the course teaching strategies.

e) Review the evaluation methods of the course.

f) Review the theoretical exam paper.

g) Review models of students' work.

h) Review the extent to which the paper and electronic forms for measuring targeted learning outcomes are met at the course level.

2. Review the descriptions and reports of courses through competitive competitions held by the Deanship of Quality and Development.
3. Review the descriptions and reports of courses through the simulation visits of the Quality and Development Deanship of eligible accreditation programs.
4. Review the descriptions of courses when creating and developing the program.
5. Review the teaching-learning methods used by the faculty member, and verify the extent to which they are applied in reality through classroom observation and student interviews according to what is included in the course descriptions.

Course review and evaluation forms

The results of the course review and evaluation are documented using various forms indicated below.

1. Course file review form.
2. Course description review form.
3. Course report review form.

4. Review form for the study of including scientific research in courses results.
5. Course content quality standards review form.
6. Course-related standard quality review form of course exams.
7. Form of reviewing of learning and teaching methods used when teaching course subjects.
8. PLOs-CLOs relationship matrix, course topics, teaching strategies, and evaluation methods.
9. Descriptive evaluation form of the extent to which the standards for writing the exam paper are applied.
10. Form for evaluation to measure the learning outcomes of the course pre and after teaching.
11. Internal/external review results report form for the course.

Fifth Axis: Program quality review and evaluation

First: Program review and evaluation concept

The evaluation and review process of the program is defined as a systematic and regular review and evaluation of all components and activities of the program for each given period.

Second: Program review and evaluation goals

The evaluation and review process of the program in general aims to identify the extent to which the program achieves its goals and learning outcomes and ensures its effectiveness. So, the evaluation and periodic review of the program by its administrators is necessary to ensure development and improvement processes and keep pace with technical innovations, scientific developments, and the labor market. The goals of the program review and evaluation can be set as follows:

1. The success of the program in preparing highly qualified graduates to practice their specialization effectively
2. The appropriateness of the educational practices of the program to the appropriate teaching and learning strategies for higher education
3. The extent to which the program meets the approved quality standards in terms of actual implementation
4. The novelty of what is presented in the courses of the program, its integration, and its balance in terms of meeting the requirements of the university and college, the basic requirements of specialization, and its academic and professional developments, from the point of view of students, faculty, employers, experts, and specialists.
5. Determining the quality of career options and job opportunities provided by the program to graduates, by analyzing the program functionally.
6. Evaluate the availability of resources to activate program processes; and the extent to which they are employed in optimal teaching and learning processes and strategies.
7. Analyse and monitor the gap, if any, between the skills and strategies identified in the program document, what is done at the implementation level, and then identify the causes and treatment.

Third: Program review and evaluation justifications

1. The massive expansion and diversity of higher education systems and institutions at present, and the multiplicity of disciplines and scientific approaches.
2. Many communities and international institutions related to higher education are increasingly aware of the controls, traditional academic practices, methods, and standards used in the evaluation, and then the penalty, exclamation, and control of higher education inputs, processes, activities, and outcomes, to ensure their quality and quantity.
3. The need for institutions operating under the umbrella of higher education to evaluate how they perform in all activities, to control the inputs, and the outcomes appear clearly.
4. Increase the efficiency of graduates from the university.
5. Contribute to ensuring the quality of programs
6. Meet the needs of the student, the community, and the labor market.

Fourth: Program review and evaluation standards

1. The periodic evaluation and review of the program should be conducted once (3-5) years and reports are prepared on the overall level of quality in the program, identifying strengths and weaknesses, and important levels of quality disparities between the program's practices and activities.
2. The tools used in the program evaluation process should vary and not be limited to one type of tool.
3. Relying on documented evidence and proofs away from personal opinions and impressions.
4. Comprehensiveness: In the sense that the evaluation process is not limited to specific parts of the program but includes inputs and processes (including the recommendations of the consultancy committee of the program, the results of the survey of graduates and students), and the outcomes of the program with attention to learning outcomes and the extent to which they are achieved and the extent to which the characteristics of graduates are achieved at all levels as well as the provision of the necessary data for evaluation and reporting processes in the program.
5. Continuity: The evaluation process should go hand in hand with the teaching and learning process to ensure that the effectiveness of the program is constantly monitored and that aspects of excellence and shortcomings are noted.
6. The main performance indicators in the program should be measured annually and their reports will be discussed and appropriate decisions made.
7. To conduct the review and evaluation of the program with the participation of stakeholders and specialists to ensure that the program is still appropriate for its existence goal.
8. Measuring performance indicators annually, reporting, and making a benchmark comparison of the program with similar programs.
9. Prepare a full self-study report for the program by the Form of the National Center for Evaluation and Academic Accreditation.

Fifth: Program general procedures for overall evaluation

1. Develop evaluation benchmarks of the following:

a) Program quality standards requirements (program self-evaluation metrics)

b) Targeted learning outcomes specified in the program document.

c) See the indicators to be collected

d) Select reference benchmarks comparison

2. Collecting and analyzing data quantitatively and descriptively and the following procedures can be followed:

a) Building metrics and tools

b) Identify sources and collect qualitative and quantitative data, including the course report, field experience report, and the annual report of the program

c) Data analysis and conclusions

d) Analysis of performance indicators and documentation of evidence.

Sixth: Program evaluation most prominent sources of information

Different sources of information are employed to evaluate the QEM program as depicted by the diagram in Figure 2.

Figure 2: Sources of the evaluation information of the program.

Seventh: Program periodic review mechanisms

The QEM program is reviewed internally and externally as described below.

Internal review mechanism of the program

The College of Engineering and the Deanship of Quality and Development (UoH) conduct the program's internal evaluation process as detailed in the following sections.

Internal review by the College

The review by the college proceeds as follows

1. An internal review committee is created at the college level according to clear and specific standards and tasks.
2. Members of the internal review committee are trained on how to perform the internal review and audit.
3. Prepare a time plan for internal review of the program including quality activities and requirements to be reviewed.
4. Implementation of the review plan is scheduled and announced to all program staff.
5. Periodic reports are prepared according to the results of internal review visits to the program.
6. Each program takes the necessary corrective action in light of the internal audit reports.
7. The college's quality department evaluates the effectiveness of implementing the of the necessary corrective actions.
8. The internal review report of the program is discussed at the meeting of the General Committee of Quality.
9. The recommendations of the General Quality Committee concerning the internal review report are submitted to the Council of the Department which manages the program in order to implement the recommendations.
10. The quality department within the college follows up the implementation of the decisions of the Council of the Department which is related to the report of the internal review of the program.

Internal review by the Deanship of Quality and Development (UoH)

The review by the Deanship of Quality Develeopment proceeds as follows.

1. Review the study plans of the new or developed program.
2. Review the program specification to ensure that the teaching strategies match the targeted learning outcomes and to ensure the novelty and quality of course vocabulary.
3. Review the program's compliance with hard copy and electronic forms for measuring targeted learning outcomes at the program level and its courses.
4. Review program reports during semester visits to ensure that they are met and how effective teaching strategies used are according to the item.
5. The Quality and Development Deanship report on program report review is submitted to the High-Quality Committee for discussion and development recommendations in light of its findings.

External review mechanism of the program

The external review of the program proceeds as follows.

1. Establish specific standards for selecting external reviewers of the program and approve them by the governing councils.
2. Select external reviewers based on the standards that have been established and adopted. The CVs of the selected external reviewers are sent to the governing councils to decide on who gets accepted.
3. Identify the documents to be reviewed and send them to the Deanship of Quality and Development to take their approval to proceed with the external review procedures of the program.
4. The Quality and Development Deanship addresses external reviewers on the conduct of the review to ensure objectivity and to preserve financial rights.
5. Receiving the Deanship of Quality and Development to report the external reviewers and sending them to the Deanship of the College.
6. The Deanship of the College directs the head of the department that manages the program to take the necessary corrective measures in light of external review reports.
7. The College's quality department verifies the implementation of the corrective actions in light of external review reports taking into account the need to inform the Deanship of Quality.
8. Presentation of corrective actions taken in the light of the external review report to the General Quality Committee to evaluate the effectiveness of the program's action.
9. Submit the recommendations of the General Quality Committee on the external review report and corrective actions taken in the light of that review to the Department's Board of Approval and Accreditation.

Periodic review forms of the program

The results of the various aforementioned reviews are recorded in special report forms as listed below.

1. The internal review results report form for the program.
2. The program's operational plan review form.
3. The form of reviewing the development and development of a program.
4. A review form of vision, mission, and program objectives.
5. The program graduates' characteristics review form.
6. The program's target learning output review form
7. The program file review form.
8. The program description review form.
9. Program report review form.
10. External review form of the program
11. Follow-up form for the implementation of corrective actions in the program.

12. Study form to include courses in scientific research results
13. Internal review report form on program accreditation standards
14. Review form of the extent to which target learning outcomes are achieved
15. Inventory form for the requirements of developing a program at the University of Ha'il.
16. The self-study/self-evaluation review form of a program.

Eighth: Program periodic evaluation mechanism

Program preliminary self-evaluation mechanism:

The program " preliminary self-evaluation " of the quality level is the first starting point and even the essential step in the strategic planning process to ensure and improve quality. The preliminary self-evaluation of the program, therefore, involves focusing on the strengths that should be preserved and developed and the weaknesses that may need to be improved objectively and based on physical evidence and not just impressions or inaccurate information.

The importance of this essential step is that it is necessary to develop quality plans in the program based on objective rules and to set priorities on which the program should focus on a timetable that takes into account the available human and material resources.

It should be taken into account that the first self-evaluation process must take into account three basic conditions:

- **Inclusiveness**: The preliminary self-evaluation process must be a comprehensive process in which all aspects, activities, and practices of the program, including facilities, equipment, services, and administrative procedures, are evaluated. This process must be carried out consistently with a focus on evaluations on performance standards for each important program activity.
- **Planning**: The program develops a clear and objective plan in terms of determining the timetable, tasks, roles, and functions assigned to individuals and entities within (and outside the program, if any) to ensure that the strategies used are appropriate and effective to achieve the goals set by the program.
- **Diversity in application**: This reflects, to varying degrees, the process of implementing the preliminary self-evaluation within the program and according to its nature and internal circumstances.

The Preliminary self-evaluation procedures of the program

The preliminary self-evaluation process adopted by the program as a key step in its overall strategy for the next five years is not a repeated one, as the program will be required in the future to conduct a full self-study by the system of evaluation and academic accreditation adopted by the Education and Training Evaluation Authority. The first self-evaluation of the program contributes to giving it a practical opportunity to deal with the authority's requirements in academic accreditation and quality assurance.

The first self-evaluation procedures of the program are determined by:

1. **Official announcement of the evaluation**

   The Dean of the College must inform the College Council and the relevant Department council about the preliminary self-evaluation process at an early stage and urge

everyone to cooperate and be precise in implementing the procedures required of them and contribute to the success of this work.

2. **Setting the overall objective of the evaluation**

   It should be emphasized that the objective of the preliminary self-evaluation process is not to catch errors or criticize those in charge of certain entities in the program, but rather to provide an objective or real basis from which the program will develop its future strategies and plans to improve quality.

3. **Team leadership selection**

   The head of the relevant department must appoint an experienced quality faculty member to lead the preliminary self-evaluation process in coordination with the college's quality assurance unit.

4. **Formation of the main committee**

   There will be a chair committee to be responsible for planning and chaired by the same official assigned to him to lead the preliminary self-evaluation process, with the importance of being given full authority and responsibility to provide guidance and support to ensure the success and performance of the Commission.

5. **Determining the committee's work strategy**

   The official leader of the preliminary self-evaluation process should, in cooperation with the members of the main committee and take advantage of their advice, he should develop a clear strategy and a detailed working mechanism on the steps of implementing this process. Including limiting the number of subcommittees and task forces tasked with carrying out specific tasks. In addition to assigning the tasks and documents needed for each step.

6. **Determining the membership of the committee**

   The main committee must consist of representatives from all staff of the program and this main committee shall be specific to this task so that the work of the Committee will be completed at the end of the task.

7. **Media campaign**

   The preliminary self-a evaluation process must be preceded by a public and organized information campaign at the program level. Through which all members of the program (faculty, students, administrators, graduates, and employers) will be informed that the program will conduct a preliminary self-evaluation of quality. Informing them of some aspects of the preliminary self-evaluation process, its period, goals, requirements, steps, and stages, the roles assigned to each category or entity within the program. In addition to, mentioning some of the benefits expected of it, such as concerning the benefits to students and instructors within the program.

8. **Individual participation**

   The announcement must show the types of opportunities and methods of participation through which individuals, both within and outside the program, can contribute to the success of the preliminary self-evaluation process. It is important to insist on informing the staff that the evaluation process is a very big process that needs the cooperation of all the staff members.

9. **Deciding the foundations of the self-evaluation process**

The Education and Training Evaluation Commission recommends that the evaluation processes be carried out by the program accreditation standards set by the Authority so that each sub-committee or team is assigned the task of assessing the status associated with one or more of the six program standards**.**

10. **Use of the evaluation metrics**

The Commission has prepared the Self-Evaluation Standards Document for the six quality standards as indicative measures of issues or aspects to consider or focus on because they will be the basis of the real quality evaluation process later.

11. **Adoption of plans and mechanisms**

All plans and mechanisms developed to implement specific aspects of the preliminary self- Evaluation by task teams and sub-committees, must be approved and agreed upon by the chairman of the main committee or by the committee as a whole before they can be implemented. That is to ensure the accuracy of implementation and consistency in the evaluation methods used between the various sub-committees in the program.

12. **Contribution of beneficiaries directly from the program's activities to the self-evaluation**

It should benefit of participating of individuals and beneficiaries who directly benefit from the program's activities. Including students, other employers, stakeholders, and others. Their participation must be utilized to achieve a certain degree of impartiality and objectivity in judging the performance of the program. The preliminary self-Evaluation process should also allow the benefit of the observations and advice of the various segments of the beneficiaries of the services provided by the program (instructors, students, and staff). It should also benefit from all the opinions or evidence available in the program on the availability of quality, but the absence of evidence and proofs of quality in the program's activities. this is in itself is considered a quality issue that must be referred to them in the preliminary self- Evaluation report.

13. **Preparation of the final report of the preliminary self-evaluation**

The preliminary self-evaluation process must end with a detailed report on the results of the evaluation process containing an executive summary and then a presentation of the background on which the report was based. After that, a description of the steps taken in the implementation of various evaluations, followed by a presentation of the results reached through various evaluations at the programmatic level (as indicated earlier). It also identifies the strengths that should be preserved and developed and the weaknesses that need further attention from program officials, providing a summary of the evidence and proof to support the findings mentioned in the report. All task force and subcommittee reports must also be attached to the overall report and accompanied by an executive summary outlining the steps taken and the results reached during the preparation of such reports.

14. **Determining the recommendations of the final report**

The final evaluation report of the program must include explicit and specific recommendations on performance and quality in all aspects and administrative and scientific activities, including research, studies, community service, facilities, services,

and scientific societies. The report should also include recommendations to deal with aspects and activities in which the program does not have evidence or proofs of quality available, and the report should include specific recommendations on the actual steps to be taken to provide such evidence and proofs to follow up on quality issues on an ongoing basis and allow future evaluations to be carried out correctly. The final report must include specific recommendations on the most important aspects and issues that the program should set among the important priorities in his plan to improve quality.

Mechanism of evaluation by the College and the Deanship of Quality & Development

College/academic program evaluation procedures

1. Prepare a plan to measure the target learning outcomes of the academic program.
2. Measuring the target learning outcomes of the academic program.
3. Measuring the characteristics of academic program graduates.
4. Application of the academic program Exit test (internal/external).
5. Involving beneficiaries and stakeholders in the evaluation of the academic program through several questionnaires and opinion polls, the most important ones are:
    a) Questionnaire for students' evaluation of the academic program.
    b) Questionnaire for faculty members to evaluate the academic program.
    c) Questionnaire identifying the awareness of faculty members about the program's mission.
    d) Questionnaire identifying the evaluation of the program from the point of view of academic and administrative leaders.
    e) Questionnaire evaluating the program from the postgraduate point of view.
    f) Questionnaire of evaluation of the program from the point of view of civil society institutions.
    g) Questionnaire identifying the evaluation of the program from the point of view of the administrators.
    h) Questionnaire measuring the students' satisfaction with the quality of the services provided by the program.
    i) Questionnaire measuring the students' satisfaction with the quality of the different preparations of the program.
    j) Questionnaire measuring the students' satisfaction with the program's laboratories.
    k) Questionnaire measuring the students' satisfaction with program learning sources.
    l) Questionnaires measuring the students' satisfaction with academic guidance provided by the program.
    m) Beneficiaries' opinion poll about the vision, mission, and goals of the program.
    n) Bachelor's students' opinion poll to determine the need for the academic program for development.

o) Alumni's opinion poll to determine the need for the academic development program.

p) Employers' opinion poll to determine the need for the academic program development.

q) Questionnaire to evaluate the extent to which the faculty member uses the strategies and methods of learning and education within the classroom according to the students' point of view.

r) Faculty opinion poll on the appropriateness of books and references to the academic program.

6. Measuring the performance indicators of the academic program.
7. Prepare the academic program report.
8. Include the results of questionnaires surveys and opinion polls in the improvement plan of the academic program in preparation for corrective action according to it.
9. The academic program takes corrective action according to the improvement plan.
10. Discuss various reports and plans related to the evaluation of the academic program at governing council meetings.
11. In college, in preparation for developing recommendations.
12. Take development decisions by governing councils according to the results of the program evaluation. (Program Quality Loop).

Procedures of evaluation at the level of Deanship of Quality & Development:

1. Formation of an internal review committee at the university level whose main task is to follow up and evaluate academic programs semesterly (follow-up visit and evaluation of academic programs in each semester, i.e., two follow-up evaluation visits during a year)
2. Get the help of the internal review team in making the field visits to the academic programs to verify the extent to which semesterly quality requirements have been met, which have been prepared in the light of several sources. Including the National Center for Evaluation and Academic Accreditation standards, previous field visit reports for academic programs, performance indicator reports, classroom observation reports, learning output measurement reports for academic and other programs.
3. Coordination with colleges to measure the academic program performance indicators and prepare reports about them. The results of these reports must be included in the academic program improvement plan in preparation for corrective action according to them.
4. Make a simulated visit to eligible accreditation programs to verify their compliance with both local and international program accreditation standards and simulations.
5. Coordinate with the university's programs to prepare the exit test and verify that the test was developed according to the program's learning outcomes. Also, make sure that ist formulated according to the learning fields of professional tests.
6. Evaluate the performance of governing councils and program committees. The most important council is the Academic Program Consultancy Council.
7. Prepare and submit a follow-up and evaluation report for academic programs.

8. Discuss the various reports and plans associated with academic program evaluation at the meetings of the High-Quality Committee, in preparation for taking the developing recommendations.

Periodic Academic Program Evaluation Forms

1. Program self-evaluation metrics.
2. The form of the academic program for follow-up and evaluation visits by the Deanship of Quality & Development experts.
3. Form for measuring academic program performance indicators.
4. Form for measuring the academic program target learning outcomes.
5. Form for measuring the academic program characteristics of graduates.
6. Questionnaires for academic program evaluation by beneficiaries.
7. Internal/external Exit Exam form for the academic program.
8. Form for academic program internal and external reviewer evaluation.
9. Form for academic program documents and requirements evaluation for change and development.
10. Form for evaluating the performance of University committees for the academic program.
11. Performance evaluation form for the college's governing councils (College Council - Department Council)
12. Form of program performance evaluation by visiting simulation by the Deanship of Quality & Development.
13. Program improvement plan form.
14. Form for including courses in the scientific research results.
15. Form for counting academic program human and material resource needs.
16. Form for evaluation the students' answer papers room.
17. Form for inventory for the requirements of developing an academic program at the University of Ha'il.
18. Form for evaluation of internal review team performance.
19. Form for evaluation of the compatibility of the program with the national qualification's framework.
20. Form for academic program self-study report evaluation.
21. Form for academic program self-evaluation report evaluation.

Sixth Axis: Governance of Program Quality Assurance System

The governance of the program quality assurance system is assumed at different levels, namely, Department level, Program level, College level, Deanship of Quality Development level and the University level as detailed in Table 12.

Table 12: Governance of Program Quality Assurance System.

Governing Council/Relevant Committees		Topics to be Discussed Related to the Academic Program Quality Assurance System
Department	Quality Committee	• Review course descriptions and reports. • Discuss amendments to the targeted learning outcomes for courses and determine modification ratios. • Discuss amendments to teaching methods and evaluation methods included in course descriptions and modification ratios. • Recommend to the Department Council to approve amendments to the target learning outcomes of the courses. • Recommend to the Department Council to approve amendments to teaching methods and evaluation methods. • Inventory development decisions made in light of the results of the evaluation of courses and other quality activities and practices in the department.
	Questionnaires Committee	• Designing and applying the program and courses evaluation questionnaires. • The results of questionnaires related to the program and courses evaluation. • Prepare the course improvement plan. • Prepare the academic program improvement plan. • Follow-up corrective actions related to the results of the evaluation of the program and courses.
	Department Council	• Approval of course descriptions and reports. • Recommendation to the College Council to approve the vision, mission, and objectives of the program. • Approval of modification in targeted program courses learning outcomes. • Approval of the modification of teaching strategies and evaluation methods included in the description of academic program courses. • Discussion of course reports.

Governing Council/Relevant Committees		Topics to be Discussed Related to the Academic Program Quality Assurance System
Program	Program Description Preparation Committee	• Prepare the preliminary vision, mission, and goals of the program. • Prepare the preliminary document for the characteristics of the program's graduates. • Prepare the preliminary list of program learning outcomes. • Formulate the description of the academic program. • Take corrective action on the description of the program in light of the results of the review and evaluation. • Recommend to the College Council to adopt amendments to the terms of the program description.
	Program Report Preparation Committee	• Prepare the academic program report. • Take corrective actions on the program report in light of the results of the review and evaluation. • Inventory for development decisions made according to the results of the program evaluation included in the annual report.
	Program Consultancy Committee	• Reviews the vision mission and goals of the program. • Discuss the program's annual report and the results of measuring learning outcomes. • Review the description of the program, its study plan, and its courses. • Review targeted learning outcomes at the program level and courses. • Discuss and review performance indicators and benchmarks comparisons. • Evaluate all academic and administrative activities of the program. • Discuss the results of the program and course evaluation and propose necessary improvements. • Discuss the descriptions, reports, and activities of field experience. • Suggest views that are directly related to the development of the program.
	Program Self-Study Committee	• Prepare the program self-study. • Set up program self-evaluation metrics. • Providing evidence and proof for self-study program. • Take corrective action on self-study according to the results of the review by independent opinion or the deanship of quality and development.

Governing Council/Relevant Committees		Topics to be Discussed Related to the Academic Program Quality Assurance System
College	Quality General Committee	• Review the vision, mission, and goals of the academic program. • Review the characteristics of graduates of the academic program. • Review the targeted learning outcomes of the academic program. • Review academic program descriptions and reports.
	Internal Review Committee	• Review and evaluate th academic program file in all its contents. • Review and evaluate the course file with all its contents. • Review documents on the development and development of the academic program.
	College Council	• Adoption of descriptions and reports of academic programs. • Adopt the vision, mission, and goals of the program. • Adoption of the characteristics of graduates of the academic program. • Adoption of targeted learning outcomes for the academic program. • Adoption of the academic program performance indicators report. • Discussion of reports on the results of the evaluation of the program and its courses. • Review and approve the new and developed study plans in preparation for submission to the Plans and Study System Committee. • Approval of the redistribution of academic program study plan hours. • Approval of the amendment in the targeted learning outcomes of the program. • Approval of the amendment to teaching strategies and evaluation methods involved in the description of the academic program.
Deanship of Quality and Development	Standing Committee for Quality	• Follow-up reviews and periodic evaluation of academic programs. • Review reports and recommendations related to academic programs. • Discuss the program's need for modification or development in light of reports filed.
University	High Committee for Quality and Development	• Discussion of the results of the review and evaluation of academic programs. • Discussion of reports of academic program performance

Governing Council/Relevant Committees		Topics to be Discussed Related to the Academic Program Quality Assurance System
		indicators. • Discuss the results of measuring the characteristics of graduates and the targeted learning outcomes of academic programs.
	Plans and Study System Committee	• Preparing forms and requirements for the approval of academic plans and programs. • Consider requests for the creation and development of academic programs. • Review the programs and study plans received from colleges to verify that they meet the prerequisites and requirements of the University. • Recommend to the University Council to approve and adopt the study plan for newly created or developed academic programs. • Approval of the amendment in the targeted learning outcomes and courses of the program. • Approval of the amendment to teaching strategies and evaluation methods included in the description of academic program courses.
	University Council	• Developquality policies, study plans, and academic programs. • Review and adopt the study plans for newly created or developed an academic program once and for all. • Adoption of the names of the newly created academic programs. • Adoption of admission requirements for the new or developed academic program.

Seventh Axis: Guarantees of Success in the Implementation of the Program Quality Assurance System

1. Support and help for higher management

This occurs through the provision of moral support and effective support by the university's higher management to the requirements of the quality of the academic program, their continued follow-up to its operations, the issuance of circulars and guidance that have had to achieve its objectives. The provision of material, human and financial equipment, and the dissemination of the culture of quality among the staff of the program. Quality improvement efforts may result in changes in how management operates, and these changes have an impact in areas such as educational and management policy, philosophy, systems, and procedures, and are effective only if the overall quality management process is supported by higher management.

2. Strategic planning

The various colleges of the university were keen to prepare their strategic plan according to the university's strategic plan (2018-2023), and carry out the work of environmental analysis of the faculty "Quadratic Analysis SWOT". They formulated a vision and a clear message expressing the reality and ambitions of the university and worked together with all members to work to ensure its achievement and develop strategic objectives that chart the way towards achieving the university's mission and vision effectively and efficiently. As part of this plan, academic programs have prepared operational plans, including several initiatives related to each of the program's three functions of teaching, scientific research, and community service.

3. Focus on achieving beneficiary satisfaction

There is no doubt that the basis of quality is to achieve the satisfaction of beneficiaries, whether they are from within the program (faculty, students- administrators) or outside the program (parents - employers), so the program works to meet the expectations of beneficiaries and translate needs into standards for the quality of outcomes.

4. Continuous training

Continuous training is one of the most important factors for the success and development of the academic program and one of the most important requirements for maintaining the quality of its outcomes, so the university is doing two types of training: The first: Permanent and continuous training due to the training needs of the university's faculty and administrators. Whereas, the second training is directed due to the shortcomings observed in a particular field or as a result of performance evaluation.

5. Group participation

A quality system cannot be achieved without the participation of all University members, so the University shares responsibility and takes full advantage of the available energies and expertise, and work to achieve job satisfaction for all. In addition to informing them of everything new and letting them participate in decision-making and giving them access to decisions.

6. Continuous improvement and development

The academic program has follow-up and evaluation mechanisms for continuous improvement and development regularly.

1. Errors avoidance

One of the objectives of continuous training is to avoid making mistakes and to perform tasks properly from the first time.

2. Decision-making based on facts, and program and courses evaluation results

Decisions are made by the governing councils of the academic program according to a set of facts, data, and correct documented information and away from personal opinions, speculations, and expectations, as well as according to the results of various quality practices and activities, especially evaluations.

3. Appreciation and motivation

The University has many methods that motivate its employees and gain their satisfaction. This is reflected in the quality of their outcomes, praising outstanding performance and encouraging creative works and rewarding their owners, and highlighting their

achievements and this is illustrated by the excellence awards presented by the university annually as well as awards and competitions presented by the Deanship of Quality and Development. Such as the best description of the program, the best description of the course, the best program report, the best decision report and the best course, the preparation of an electronic course, and others.

Eighth Axis: Mechanism of review and evaluation of the program quality assurance system

The evaluation of the program quality assurance system proceeds according to a mechanism which includes:

1. The formation of a special committee to evaluate the quality system of the academic program due to clear and specific standards and tasks.
2. The Committee prepares a quality system evaluation plan for the academic program including tools, methods, and evaluation periods.
3. Review and audit the quality system evaluation plan for the academic program by the Deanship of Quality and Development.
4. Take the necessary corrective action according to the report of the review of the deanship of quality and development of the quality system evaluation plan for the academic program.
5. Implementation of the internal quality systems evaluation plan for academic programs in scheduled and announced periods on all academic programs.
6. Examining the gap between the status of the academic program and the requirements of the quality assurance system of the program, using various tools including "auditing", "interviews", "questionnaires". Eventually, a specific picture of the distance or proximity of the academic program to the desired quality assurance system. The basic outcomes of this study are to accurately identify the gap between the existing system in the program and the target quality assurance system.
7. Develop performance indicators associated with the quality assurance system of the academic program and use them to judge the extent to which its objectives are achieved.
8. Periodic review of all practices and activities related to ensuring the quality of the academic program by pre-prepared evaluation tools, and reviewed by experts and specialists.
9. Review the policy of ensuring the quality of the academic program in coinciding with the program's self-evaluation and progress for academic accreditation.
10. Building evaluation tools for the extent to which the policy of ensuring the quality of the academic program is activated. They should contain questionnaires (to determine the extent to which the quality policy is activated by the academic program - an interview with quality officials to determine the activation of the quality assurance policy in the academic program).
11. Prepare a questionnaire to evaluate the effectiveness of the quality assurance system for the academic program.
12. Prepare reports on the results of the evaluation of the quality system of the academic program.

13. Discussion of quality system evaluation reports for the academic program in the relevant committees and governing councils.
14. The program management, in partnership with specialists, develops an operational plan for the steps and actions to be taken in light of the results of the evaluation of the quality system of the academic program.

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