جامعـة الأميـرة نـورة بنـت عبدالرحمن
Princess Nourah bint Abdulrahman University

# Quality Management System

## College of Engineering

## Electrical Engineer Department

## Communications Engineering Program

First Edition

This document presents guidelines for Quality Management System (QMS)
for all Electrical Engineer programs at Princess Nourah bint Abdulrahman University.
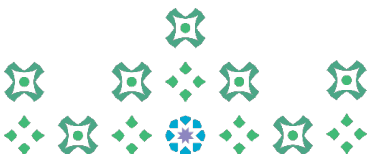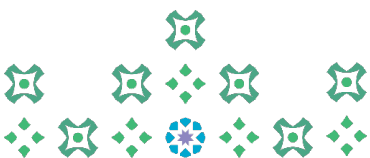
2024-2025

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# 1. Introduction

The process for a quality management system in the Communications Engineering Program clears the strengths and weaknesses of the programs and assists in the design and implementation of improvement plans to improve quality. Electrical Engineer Department - Communications Engineering Program Management System manual was developed according to clear and regulated processes and included a detailed programs quality standards and practices and record the development and changes than the last year (2022-2023). This will contribute to drawing clear work procedures, describing regulations, and clearly defining tasks and responsibilities in each area of the quality management system.

## 1.1. About the Communications Engineering Program

The Electrical Engineering Department - Communication Engineering Program was established in line with the Saudi vision 2030 in order to increase women's participation in the working class, especially in the engineering and related sectors. The department aspires to be a model emulated in qualifying female engineers nationally and internationally.

The program graduates are expected to acquire the knowledge and skills that enable them to effectively perform in the technical fields of communication engineering whether in governmental organizations or private companies. Some positions that communication engineers can occupy are as follows :

- Fields of mobile communication of various generations and types.
- Applications of automatic control and security of civil and military communication networks.
- The fields of radio, television, and satellite channels.
- Landline and mobile telephone networks using optical fiber communications.
- Internet networks for banking, commerce, government, and distance e-learning.
- Marine and air navigation systems in ports and airports.

# 2. Quality Assurance system

Electrical Engineering Department's Communications Engineering Program Quality Assurance system is built to follow the College of Engineering's quality management system, which adheres to the university's quality management system guidebook. It follows the four main stages of the Quality Cycle (PDCA): Plan, Do, Check, and Act.

Through these four stages, the planning process begins with an inventory for all quality processes needed for the programs and prepare all the required forms and templates for this stage. After planning stage, the work started for implementation stage to fulfill specifications for courses and programs by programs academic members and all required reports as Program tree, course reports, Key Performance Indicators (KPIs), surveys and Course Learning Outcomes (CLOs) & Program Learning Outcomes (PLOs) measuring reports. The reports from the previous stage are checked in the third stage to find out how the program quality procedure provides the required level of program development and sustainability. Finaly the fourth stage, act that provides the action plans and assigning the responsibility of development and close the cycle of the quality.

All the forms used in the quality management processes are updated NCAAA forms for this year 2023- 2024.



The program forms including NCAAA forms such as: Self Evaluation Report, Self–Study Report, and Action Plan.

The flowchart of the quality process in the program and the forms/ templates used in this stage

The program forms including NCAAA forms such as: Program and Course Reports, PLO Measurement Report, Survey Results, and KPI's Report

The program forms including NCAAA forms such as: Program and Course Specifications, Program Tree, Program and Course Rubrics, Surveys, and KPI's

Act    Plan    Check    Do

**Figure1. Quality Cycle**.

## 2.1. Plan

For the planning stage, the programs specify the needs and benchmarking regarding the goals and achievements required for the program quality. The program committee define the goals and the new level which is looking for to achieve the target. The organizational structure shows the Communications Engineering Program quality system as below.
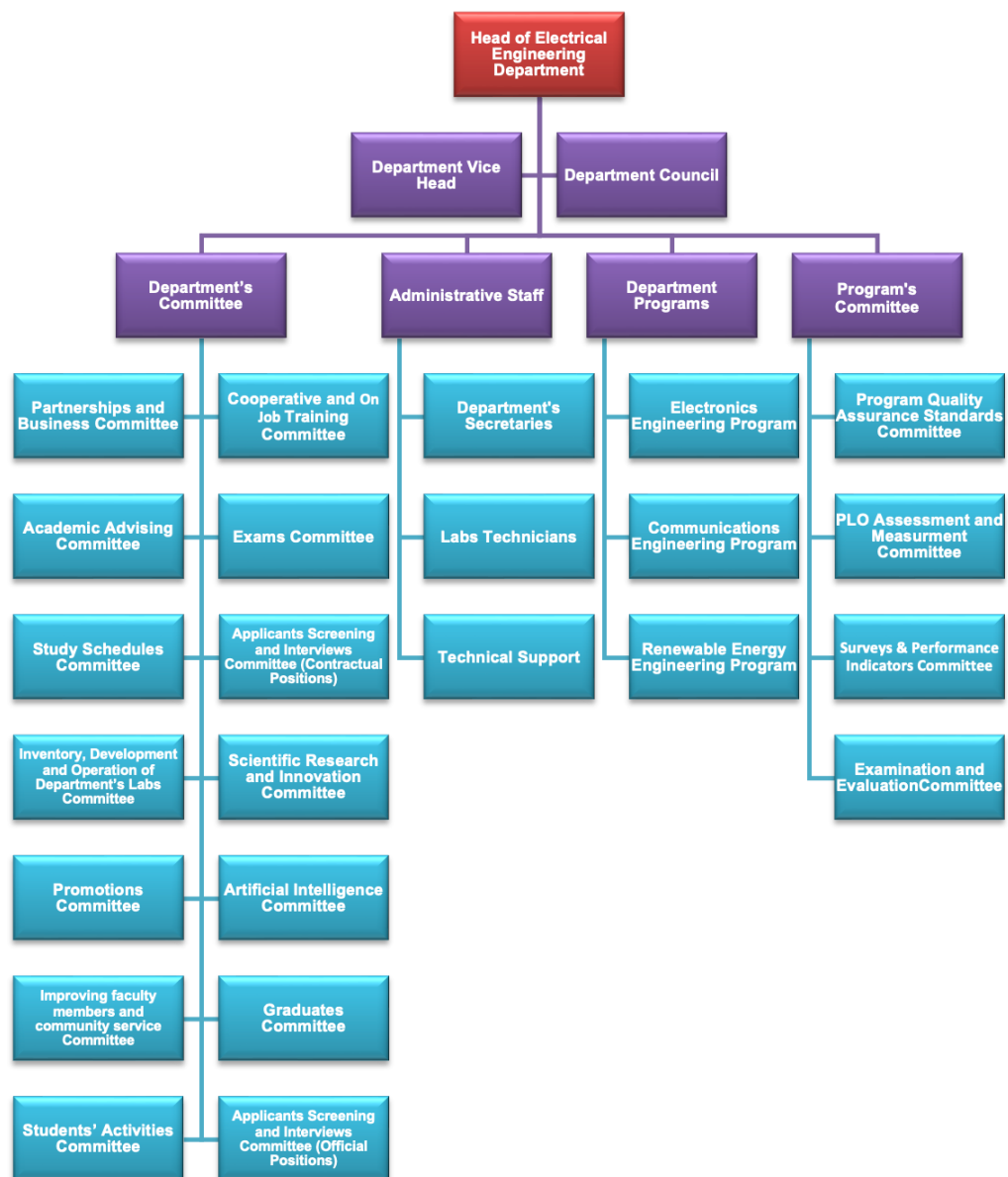
**Figure2. The organizational structure of the Communications Engineering Program's quality management system.**

## 2.1.1. The Role of the Deanship of Development and Quality in Supporting Academic Programs

The above figure shows the role of the Deanship of Development and Quality in supporting the college to reinforce quality management system processes in academic programs, according to two tracks:

1. The first track is related to the preparation and applying for program academic accreditation.
2. The second track is related to the program development.
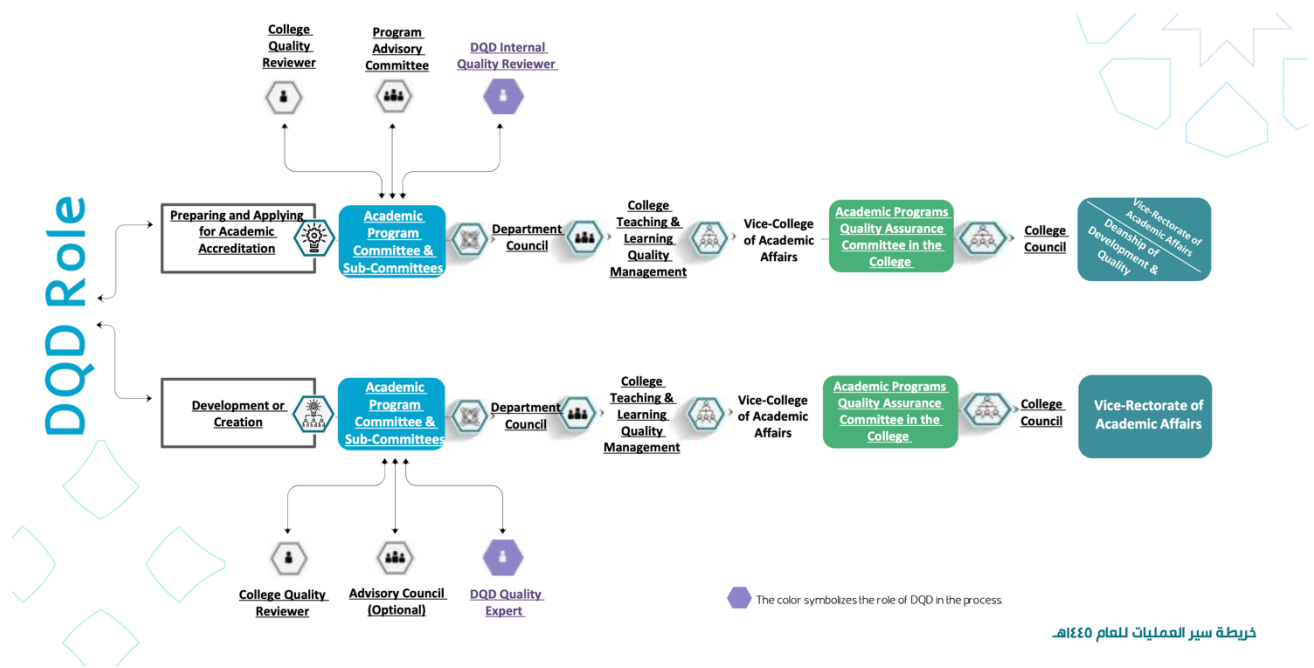


**Figure 3.DQD Role Flow chart**

## The First Track: preparation procedures for program academic accreditation:

In this track, Deanship of Development and Quality is keen to provide the academic program with an internal quality reviewer to support the program when applying for accreditation in accordance with the program time plan for accreditation.

Moreover, if the program obtains conditional accreditation, Deanship of Development and Quality shall support the program through reviewing the report for removing the condition and ensuring the quality of documents. In this track, the quality workflow first starts from:

- The Academic Program Committee, which has a continuous and sustained relationship with the program support group. This group provides the program with advice and proposals for amendment or development. The support group consists of the following: (the college quality reviewer, the program advisory committee, Deanship of Development and Quality internal quality reviewer).
- Approving the program documents by the Department Council.
- Submitting the program documents to the Teaching and Learning Quality Management in the College and then vice- college of academic affairs.
- Submitting the program document to the academic program quality assurance committee in the college that is named (advising committee for college of engineering programs accreditation) in college of engineering.
- Submitting the program documents to the College Council for approval.
- Submitting the program documents to Deanship of Development and Quality to ensure the completion of the accreditation requirements before submitting them to NCAAA or submitting the program documents to vice rectorate of academic affairs.

## The Second Track: the program development or Creation.

In this track, Deanship of Development and Quality is keen to provide the academic program advising through an internal quality reviewer when asking for changes or development in the program. In this track, the quality workflow first starts from:

- The Academic Program Committee, which has a continuous and sustained relationship with the program support group. This group provides the program with

advice and proposals for amendment or development. The support group consists of the following: (the college quality reviewer, Deanship of Development and Quality internal quality expert).

- Approving the program documents by the Department Council.
- Submitting the program documents to the Teaching and Learning Quality Management in the College then vice- college of academic affairs.
- Submitting the program document to the academic program quality assurance committee in the college that is named (advising committee for college of engineering programs accreditation) in college of engineering.
- Submitting the program documents to the College Council for approval.
- Submitting the program documents to vice rectorate of academic affairs for approval.

## 2.1.2. Academic Program Committee

The Academic Program Committee is responsible for ensuring the quality of the program, as well as qualifying the program for academic accreditation, and monitoring its continuous improvement. The Academic Program Committee is under the authority of the Academic Department.

- **Membership**:

The committee is formed by the Head of the Academic Department to which the program is affiliated (if applicable). In the event that the Academic Program is directly affiliated with the College, the committee is formed by the College Dean, based on a proposal from the program director. The membership of the committee (in both cases) is as follows:

| Department Head (if applicable) | Chair |
|---|---|
| Program Director | Treasurer of the Committee |
| At least 3 faculty members | Members |
| Administrative Quality Coordinator | Secretary |

- **Role and Responsibilities:**

| Position | Description | Tasks |
|---|---|---|
| The Academic Program Committee | Members in the department | 1. Spreading the culture of quality and academic accreditation and building the capabilities of the program members to work in favor of quality assurance and academic accreditation.<br>2. Spreading the culture of quality and academic accreditation and building the capabilities of the program members to work in favor of quality assurance and academic accreditation.<br>3. Implementing the Quality Management System of PNU (PNU-QMS), and developing a quality management manual for the program that includes the responsibilities of the Academic program committees and ensuring its alignment with the PNU-QMS.<br>4. Implementing the recommendations of the Program Advisory Committee.<br>5. Monitoring the implementation of the program quality assurance procedures that include but are not limited to: (the program & course specifications, preparing the program & course annual reports, preparing the self-study report, activating surveys, measuring KPIs, and the program operational plan (Action Plan)).<br>6. Organizing an external mock review visit for the program.<br>7. Submitting accreditation documents, preparing the program members for the external review visit, and ensuring the validity of the program's response to NCAAA recommendations, in coordination with the Deanship of Development & Quality.<br>8. Overseeing the program continuous process of development and improvement.<br>9. Overseeing the program continuous process of development and improvement. |
| Program Director | Treasurer of the Committee | 1. Holding the Academic Program Committee meetings (a minimum of 3 sessions during the semester) to ensure the implementation of the Quality Management System (QMS) and everything related to the process of program development and improvement, and closing the quality loop.<br>2. Monitoring the implementation of the program quality assurance procedures assigned to the Academic Program Committee.<br>3. Supervising the implementation of the Program Advisory Committee recommendations.<br>4. Preparing the program development plan (Action Plan) in coordination with the Academic Program Committee and monitoring its implementation.<br>5. Ensuring the completeness of the program's quality documents, and archiving them electronically to be approved by the |

| | | |
|---|---|---|
| | | Department Head, and then submitted to the Teaching and Learning Quality Management Office in the College.<br>6. Organizing the program mock visit and external review visit, in coordination with the Academic Program Committee.<br>7. Supervising the students' nominations to be "Quality Friends".<br>8. Preparing a comprehensive report on the work, recommendations and development plans of the program committees to be submitted to the Teaching & Learning Quality Manager.<br>9. Any other task assigned in the field of specialization. |
| **Program Administrative Quality Coordinator** | **Secretary** | 1. Attending the Academic Program Committee meetings and taking meeting minutes as directed by the Program Director.<br>2. Monitoring administrative procedures to facilitate and expedite the work of the Academic Program Committee.<br>3. Managing the program's emails daily.<br>4. Reviewing the completeness of quality documents and reporting any error to the Program Director.<br>5. Archiving the program's quality documents electronically.<br>6. Communicating effectively with the College Quality Coordinator in regard to required quality and accreditation forms.<br>7. Any other task assigned in the field of specialization. |

- **Operation:**

  o **Meetings:** The committee holds periodic meetings upon the invitation of its chair, with no less than three meetings in each semester.

  o **Decision Making:** Decisions are taken unanimously. In case of disagreement, votes are taken, and the chair shall have the casting vote when votes are equal.

  o **Term of Membership:** The term of membership is a full academic year, and members may renew their terms according to developments.

### 2.1.3.Program Learning Outcomes (PLOs) Measurement Committee

The Program Learning Outcomes Assessment & Measurement Committee is a sub-committee of the Academic Program Committee. It is responsible for measuring and assessing the learning outcomes of the program.

- **Membership:**

The sub-committee is formed by the Head of the Academic Department of which the program is affiliated (if applicable). In the event that the academic program is directly affiliated with the college, the sub-committee is formed by the College Dean based on a proposal from the program director. The membership of the committee (in both cases) is as follows:

| | |
|---|---|
| Program Director | Chair |
| Faculty Member | Vice-Chair |
| Coordinators of the concerned courses/levels/pathways | Members |
| Administrative Quality Coordinator | Secretary |

- **Tasks:**

1. Reviewing the program learning outcomes and ensuring their alignment with the program objectives.
2. Developing the program rubrics to measure the learning outcomes and identify performance indicators for each outcome.
3. Developing action plans to measure the program learning outcomes and determine the courses and levels through which the learning outcomes will be measured.
4. Reviewing the course rubrics and ensuring their alignment with the program rubrics.
5. Collecting and analyzing results, then identifying points of strengths, needs and suggestions for development in order to present them to the Academic Program Committee.

- **Operation:**
  - **Meetings:** The committee holds periodic meetings upon the invitation of its chair, with no less than two meetings in each semester.
  - **Decision Making:** Decisions are taken unanimously. In case of disagreement, votes are taken, and the chair shall have the casting vote when votes are equal.
  - **Term of Membership:** The term of membership is a full academic year, and members may renew their terms according to developments.

## 2.1.4. Examination & Evaluation Committee

The Examination & Evaluation Committee is a sub-committee of the Academic Program Committee. It is responsible for analyzing, following up and reporting on the students' exams results, and providing recommendations and improvement plans.

- **Membership:**

The sub-committee is formed by the Head of the Academic Department of which the program is affiliated (if applicable). In the event that the academic program is directly affiliated with the college, the sub-committee is formed by the College Dean based on a proposal from the program director. The membership of the committee (in both cases) is as follows:

| | |
|---|---|
| Program Director | Chair |
| Faculty Member | Vice-Chair |
| Coordinators of the concerned courses/levels/pathways | Members |
| Administrative Quality Coordinator | Secretary |

- **Tasks:**

1. Developing a plan to review the exams and distributing the tasks among faculty members.

2. Ensuring that the value points for answering each question of the exam are matched to the marking scheme approved by the Program Learning Outcomes Assessment & Measurement Committee.

3. Reviewing the questions of exams and ensuring their alignment with the intended learning outcomes.

4. Calculating and analyzing the results of the exams each semester, and providing the appropriate recommendations.

5. Reviewing the results of exams according to the exams review plan, and verifying students' final results with the mark sheets in all the courses before submitting the results.

6. Calculating and analyzing the results of field training and graduation projects and courses that are not assessed by final exams each semester, and providing the appropriate recommendations.

7. Identifying the courses that have high deviations, reviewing the comments on students grades in these courses' reports, and preparing a report on the reasons of deviation.

8. Investigating students' exam-related issues (students excused absences, re- marking requests, grievances of students related to grades) before submitting them to the department council.

9. eceiving and investigating students' exam-related complaints, and recommending the legal actions to be taken before submitting them to the department council.

10. Suggesting the appropriate training for faculty members on assessment methods such as, workshops for developing exams questions.

11. Preparing and submitting an annual report on the committee activities to the program committee.

- **Operation:**
  - **Meetings:** The committee holds periodic meetings upon the invitation of its chair, with no less than two meetings in each semester.
  - **Decision Making:** Decisions are taken unanimously. In case of disagreement, votes are taken, and the chair shall have the casting vote when votes are equal.
  - **Term of Membership:** The term of membership is a full academic year, and members may renew their terms according to developments.

## 2.1.5. The Surveys & Performance Indicators Committee

The Surveys & Performance Indicators Committee is a sub-committee of the Academic Program Committee. It is responsible for activating quality surveys, collecting the program performance indicators data and values, and monitoring the program improvements and development plans.

- ### Membership:

The sub-committee is formed by the Head of the Academic Department of which the program is affiliated (if applicable). In the event that the Academic Program is directly affiliated with the College, the sub-committee is formed by the College Dean based on a proposal from the program director. The membership of the committee (in both cases) is as follows:

| Program Director | Chair |
|---|---|
| Faculty Member | Vice-Chair |
| At least 3 faculty members | Members |
| Administrative Quality Coordinator | Secretary |

- ### Tasks:

1. Preparing and monitoring the activation plan for the program's surveys and performance indicators.

2. Conducting a performance benchmarking and comparison at the program level.

3. Monitoring surveys response rates and increasing them by publishing the surveys links among target groups.

4. Collecting and analyzing the program's performance indicators values.

5. Presenting and addressing the results to the Academic Program Committee.

6. Preparing the necessary program surveys & KPIs reports and ensuring the implementation of the development plans.

7. Preparing and submitting the final reports the Academic Program Committee.

- **Operation:**
  - **Meetings:** The committee holds periodic meetings upon the invitation of its chair, with no less than two meetings in each semester.
  - **Decision Making:** Decisions are taken unanimously. In case of disagreement, votes are taken, and the chair shall have the casting vote when votes are equal.
  - **Term of Membership:** The term of membership is a full academic year, and members may renew their terms according to developments.

## 2.1.6. Main Committee for Program Quality Assurance Standards

The Main Committee for Program Quality Assurance Standards is a committee of the Academic Program Committee that is responsible for ensuring the fulfillment of quality standards and requirements in the academic program.

- **Membership:**

The main committee and sub-committees are formed by the Head of the Academic Department of which the program is affiliated (if applicable). In the event that the Academic Program is directly affiliated with the College, the sub-committee is formed by the College Dean based on a proposal from the program director. The membership in both cases is as follows:

- The Main Committee for Program Quality Assurance Standards is formed under the chairmanship of the Department Head. The committee includes the Program Director as the Vice-Chair, and five members of the teaching staff in the program (who have experience and sense of responsibility), as well as the program administrative quality coordinator, so that each member of the teaching staff is responsible of each standard (taking into consideration sustaining the work team as much as possible).

- The sub-committees of the Main Committee for Program Quality Assurance Standards are formed so that the chair of each sub-committee is a member of the Main Committee. The memberships of the sub-committees consist of at least two members of the teaching staff in the program. The formation of the Main

Committee and its sub-committees is approved by the Department and College Councils.

**The Main Committee for Program Quality Assurance Standards:**

| | |
|---|---|
| Department Head | Chair |
| Program Director | Vice-Chair |
| Chairs of the Standards Sub-Committees | Members |
| Administrative Quality Coordinator | Secretary |

**The Sub-Committees of the Main Committee for Program Quality Assurance Standards:**

- **Standard One (Program Management & Quality Assurance): Committee Chair:** The Program Director and four members.

- **Standard Two (Teaching & Learning): Committee Chair:** A faculty member and four other members.

- **Standard Three (Students): Committee Chair:** A faculty member and two other members.

- **Standard Four (Teaching Staff): Committee Chair:** A faculty member and two other members.

- **Standard Five (Learning Resources, Facilities & Equipment):** Committee Chair: A faculty member and two other members.

- **Role and Responsibilities:**

| Position | Description | Tasks |
|---|---|---|
| **Chair of the Main Committee for Program Quality Assurance Standards** | **Department Head** | 1. Leading and organizing the program accreditation activities.<br>2. Preparing an implementation plan with a specific timeline to complete the accreditation requirements.<br>3. Overseeing the sub-committees to ensure the implementation of the required tasks within the specified dates.<br>4. Supervising and monitoring the implementation of the action plans submitted by the sub-committees.<br>5. Supervising the training of the academic, technical and administrative members in the College and qualifying them regarding accreditation requirements and standards.<br>6. Supervising the dissemination of quality and accreditation culture.<br>7. Documenting stages of completion in approved meeting minutes and following up on them.<br>8. Reviewing the interim and final completion reports.<br>9. Supervising the mock visit and external review visits, in coordination with the Program Director.<br>10. Arranging for the initial evaluation visit by the Deanship of Development and Quality.<br>11. Leading the meetings, distributing tasks, and communicating with the work team.<br>12. Supervising the preparation of the evidence room to receive the review team, in coordination with the Program Director.<br>13. Following-up on the annual follow-up report for the accredited program.<br>14. Monitoring the Achievements of fulfilling the conditions for the accredited program (if applicable). |
| **Chairs of the Sub-Committees** | | 1. Examining the program current status on fulfilling each standard.<br>2. Developing an action plan to meet each standard and ensure achieving academic accreditation.<br>3. Preparing the program's members and stakeholders (students / alumni / employers) for the external review visit by holding workshops to inform them about the program self-study report.<br>4. Preparing the final version of the program self-study report by preparing the part of the assigned standard. |

| | | 5. Fulfilling the recommendations of the Review Panel Report after the accreditation visit. |
| --- | --- | --- |
| | | 6. Leading the meetings, distributing tasks, and communicating with the work team. |
| | | 7. Meeting the requirements of the annual follow-up report for the accredited program. |
| | | 8. Meeting the requirements of fulfilling the conditions for the accredited program (if applicable). |
| **Members of the Sub-Committees** | **Members in the department** | 1. Gathering the appropriate evidence based on accreditation requirements and standards. |
| | | 2. Monitoring the process of activating the program's surveys and reports. |
| | | 3. Completing KPIs data collection and reports. |
| | | 4. Preparing the initial draft of the program self-study report by preparing the part of the assigned standard. |
| | | 5. Fulfilling the independent opinion comments on the program self-study report. |
| | | 6. Working on the annual follow-up report for the accredited program. |
| | | 7. Working on fulfilling the conditions for the accredited program (if applicable). |
| | | 8. Preparing monthly and periodic achievements reports. |
| | | 9. Attending the meetings. |

- **Operation:**
  - **Meetings:** The committee holds periodic meetings upon the invitation of its chair, with no less than two meetings in each semester.
  - **Decision Making:** Decisions are taken unanimously. In case of disagreement, votes are taken, and the chair shall have the casting vote when votes are equal.
  - **Term of Membership:** The term of membership is a full academic year, and members may renew their terms according to developments (taking into consideration sustaining the work team as much as possible).

## 2.1.7.Program Advisory Committee

Each academic department in a college or institute shall have a council with the head of the department as chairman and its faculty members as members. Faculty members from other departments may, when necessary, be appointed to the council pursuant to a decision by the university president.

The dean shall chair the department council in the absence of the head of the department or upon the vacancy of the position.

Subject to the provisions of the Law and the regulations and rules issued by the Council of University Affairs, the board of trustees, and the university council, the department council shall be responsible for the department's academic, financial, and administrative affairs, including determining curricula criteria, ensuring compliance therewith, and reviewing such criteria periodically. The council may delegate certain powers to its chairman, in accordance with the power delegation rules approved by the board of trustees. The department council may form committees from among members or non-members.

- The department council shall convene upon a call by its chairman at least once every month during the academic year. Council meetings shall only be valid if attended by at least two-thirds of its members, including the chairman or his designee from among members. Council decisions shall be passed by majority vote of attending members; in case of a tie, the meeting chairman shall have the casting vote.

- Department council decisions shall be effective unless contested by the college or institute dean within seven days from the date of receipt. If contested, they shall be returned to the department council together with dean's comments for reconsideration. If the council maintains its position, such decisions shall be referred to the college or institute council to decide thereon.

- **Tasks:**

1. Identifying the needs of professional institutions and providing advice and suggestions to assist in the development of the program and its study plan, to meet labor market needs.

2. Encouraging professional institutions of both public and private sectors to participate in the training and educational programs offered by the program, including short courses and workshops, as well as lectures and seminars.
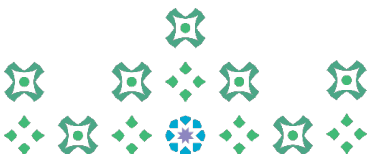
3. Reviewing the program's mission, goals, objectives, and performance indicators in light of new scientific and technological developments and labor market requirements, by providing an academic and professional insight regarding education, scientific research and community service.

4. Reviewing the program and course intended learning outcomes, and their compatibility with the National Qualifications Framework and labor market needs.

5. Reviewing the program specification and annual reports and providing feedback on the study plan & courses in terms of their novelty and distinction in achieving the program's objectives and outcomes, which helps in preparing the program's continuous development and improvement plans.

6. Evaluating all the program activities, both curricular and extracurricular, considering the academic accreditation standards.

7. Reviewing the results of the program performance indicators and recommend the selection of appropriate external benchmarks.

8. Reviewing the program's graduate attributes, which should be clear in its mission statement and reflected in its intended learning outcomes.

Committees Formation for
Communication Engineering Program

DQD Role Flow chart

## 2.3. Do (Implementation)

### 2.3.1. Mission, and goals of the department and the Communications Engineering Program

**University Mission:**

Princess Nourah bint Abdulrahman University is a comprehensive university for women, distinguished by its leadership in education and scientific research. It contributes to establishing a knowledge-based economy with societal and global partnerships.

**College of Engineering Mission:**

Qualifying skilled and professional female engineers in an innovative educational and research environment to enhance national identity and support economic and societal sustainable development.

**Electrical Engineering Department Mission:**

The department of electrical engineering at PNU is dedicated to preparing and qualifying engineers at the highest level of competence that can compete nationally and internationally. This is achieved by providing an integrated academic environment that aims to develop knowledge and skills, and foster innovation and scientific research to contribute to the attainment of national development goals and community service.

**Electrical Engineering Department Goal:**

1. Provide high-quality educational programs in electrical engineering to ensure effective teaching and learning.

2. Introduce modern educational programs that is aligned with the latest technologies and advancements in electrical engineering fields, aimed at graduating distinguished students capable of competing in the job market.

3. Promoting scientific research and ongoing development in electrical engineering disciplines, to serve the community and achieve the sustainable development goals.

4. Enhance social responsibility and volunteer work through communication and collaboration with community businesses.

5. Raise students' awareness about the significance of integrity and ethical conduct and promote professional values within the realm of electrical engineering.

**Communications Engineering Program Mission:**

Prepare highly qualified female communications engineers with strong academic and professional qualifications, who possess research and leadership skills, and are capable of effectively dealing with modern technologies to work efficiently, to keep pace with changes in the job market and serve the community.

**Communications Engineering Program Goal:**

1. Enhance the quality and efficiency of education and learning for the communications engineering program to prepare distinguished graduates equipped with scientific theories, practical skills, competitive abilities, and a strong sense of professional ethics, enabling them to keep pace with market changes.

2. Link scientific research with the requirements of sustainable development in the Kingdom of Saudi Arabia and community needs.

3. Promote community partnerships in communications engineering fields.

**Program Graduate Attributes:**

| | | | |
|---|---|---|---|
| 1 | Knowledge and Understanding | 1. Knowledge and Understanding | Knowledge of mathematical, scientific, and fundamental engineering sciences. |
| | | 2. Technical Knowledge | Acquiring knowledge and a deep understanding of the technologies used in the field of Communications engineering. |
| 2 | Skills | 3. Creative Analysis | Applying the acquired knowledge and concepts to solve problems and analyze and interpret the results. |
| | | 4. Using Modern Technologies. | Utilizing equipment, tools, devices, and auxiliary means in the field of modern Communications engineering. |
| | | 5. Research and Innovation Skills | Conducting research and scientific studies and providing consultancy services in all areas of Communications engineering. |
| 3 | Values, Autonomy and Responsibility | 6. Self-development | Continuously acquiring knowledge and keeping up with gradual progress in the fields of electrical engineering and Communications engineering |
| | | 7. Ethics and Professional Safety. | Understanding and monitoring responsibilities related to occupational safety, ethics, the environment, and economics. |
| | | 8. Effective Communication and Teamwork | Collaborating effectively and professionally with colleagues, working within teams, and serving customers. |
| | | 9. Leadership and Entrepreneurial Qualities | Displaying leadership qualities, managing business, engineering project organization skills, and entrepreneurship. |
| | | 10. Community Service | Enhancing and developing the engineering field, contributing to professional development, and serving the community. |

# Learning outcomes of the Communications Engineering program

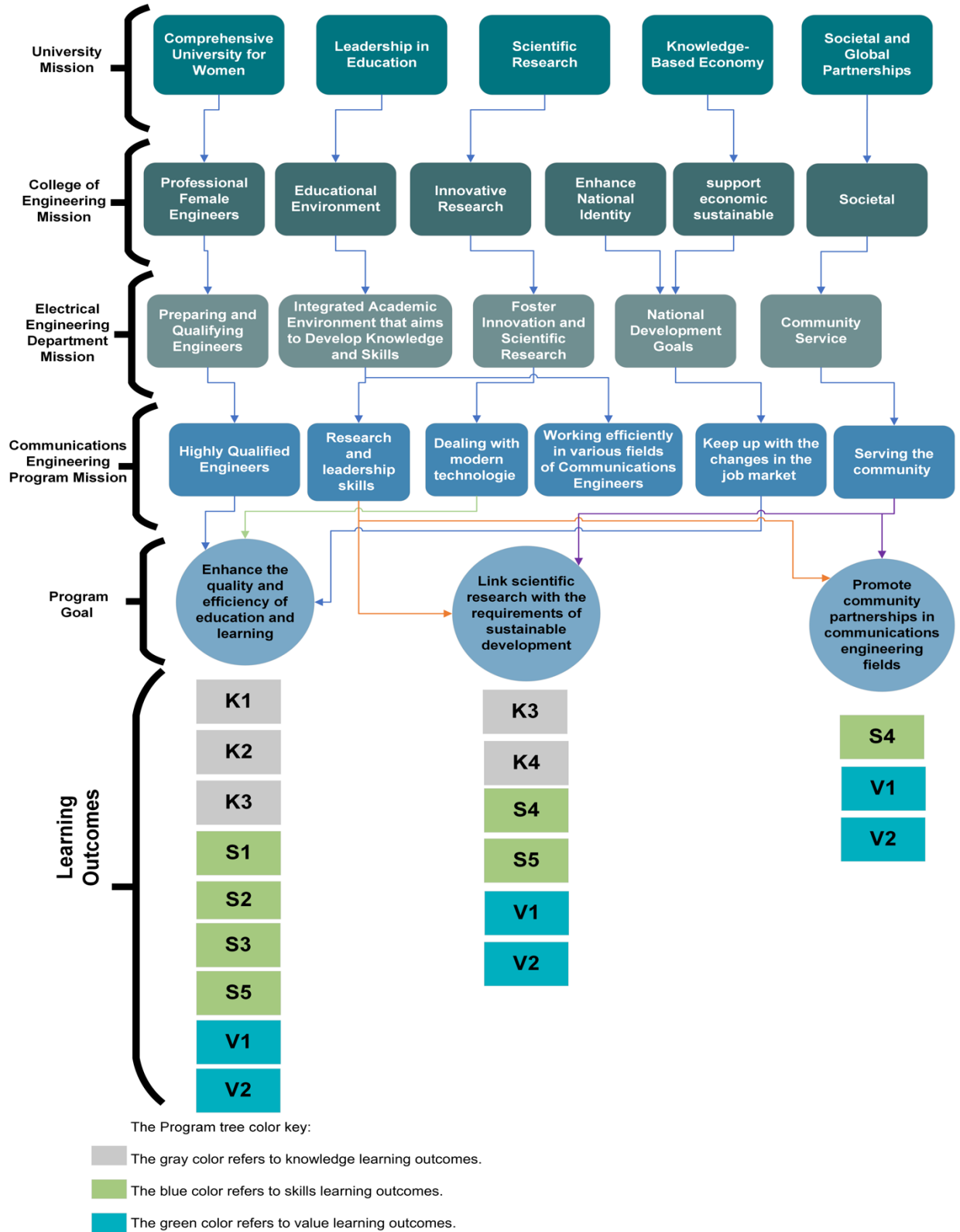| | Knowledge and Understanding |
|---|---|
| K1 | Define knowledge of mathematical concepts including differential and integral calculus, probability and statistics, along with their applications in the field of Communications Engineering. |
| K2 | Recognize electrical engineering principles including processes, materials, techniques and practices in the field of Communications Engineering. |
| K3 | Identify specialized knowledge based on new developments related to the field of Communications Engineering. |
| K4 | Integrate knowledge of research methodologies in reports and researches related to the field of Communications Engineering. |
| | Skills |
| S1 | Apply concepts, theories and mathematical principles to solve complex problems related to the field of Communications Engineering. |
| S2 | Conduct complex practical tasks and procedures related to Communications Engineering by applying advanced processes, techniques, tools, and instruments. |
| S3 | Design system, component, or process to solve Communications Engineering problems while considering realistic constraints (cultural, social, environmental, economic, health and safety). |
| S4 | Evaluate contemporary issues and problems in Communication systems, components, and process using critical thinking and creative solutions in various complex contexts. |
| S5 | Communicate effectively to demonstrate theoretical knowledge comprehension and specialized transfer of knowledge, skills, and complex ideas. |
| | Values |
| V1 | Execute teamwork and leadership skills through creating a collaborative and inclusive environment while establishing goals to meet and planning tasks. |
| V2 | Demonstrate commitment to professional and academic values and standards and ethical code of conduct as experts in the field of Communications Engineering. |

**University Mission**
- Comprehensive University for Women
- Leadership in Education
- Scientific Research
- Knowledge-Based Economy
- Societal and Global Partnerships

**College of Engineering Mission**
- Professional Female Engineers
- Educational Environment
- Innovative Research
- Enhance National Identity
- support economic sustainable
- Societal

**Electrical Engineering Department Mission**
- Preparing and Qualifying Engineers
- Integrated Academic Environment that aims to Develop Knowledge and Skills
- Foster Innovation and Scientific Research
- National Development Goals
- Community Service

**Communications Engineering Program Mission**
- Highly Qualified Engineers
- Research and leadership skills
- Dealing with modern technologie
- Working efficiently in various fields of Communications Engineers
- Keep up with the changes in the job market
- Serving the community

**Program Goal**
- Enhance the quality and efficiency of education and learning
- Link scientific research with the requirements of sustainable development
- Promote community partnerships in communications engineering fields

**Learning Outcomes**

K1, K2, K3, S1, S2, S3, S5, V1, V2

K3, K4, S4, S5, V1, V2

S4, V1, V2

The Program tree color key:

The gray color refers to knowledge learning outcomes.

The blue color refers to skills learning outcomes.

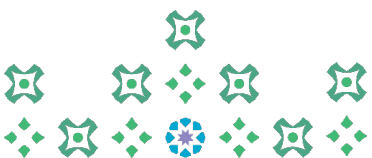The green color refers to value learning outcomes.

**Figure2. Program Tree.**

## 2.3.2. Program Learning Outcomes Measurement Procedure

For the importance of measuring and monitoring students' achievement and performance accurately, the program learning outcomes are measured periodically by using the electronic quality system (Jadeer). This process is subject to the principles and policies undertaken by the program Learning Outcomes Assessment& Measuring Committee.

The efficiency and accuracy of the measurement and evaluation processes in terms of objectivity, transparency, and effectiveness are verified by the used mechanisms and tools that ensure the continuous quality of the processes.

Program Learning Outcomes Measurement designed to be illustrated as the following:

- Direct method
- Indirect method

**For the direct measuring method**, the Program Learning Outcomes Mapping Matrix links the learning outcomes of the program with selected mandatory courses with the program identity according to the following levels:

- P = Practiced
- M = Mastered

The Learning Outcomes Assessment & Measuring Committee and the course coordinators create a measuring plan within a maximum of two years for one measurement cycle for the core courses in the practiced and Mastered level that have been selected for the measurement process. The results of students' achievement in these courses, extracted from the electronic quality system (Jadeer), are projected onto the Program Learning Outcomes (PLOs) according to the measuring plan as follows:

- Measure the achievement of each PLO from the courses assessment results.
- Analyze the results to get the strengths, weakness, and points of improvements.
- Formulate recommendations and actions for improvement process based on different results for each of the PLOs.
- PLO assessment report is written at the end of the academic year and includes all the following components:
  - o Results
  - o Analysis
  - o Recommendations

o Actions with a timeline and assigned responsibilities.

Program Learning Outcome Assessment & Measurement committee follows-up the action plan implementation. Additionally, the program conducts a comprehensive review and assessment of the PLOs as a measure of program quality improvement every program cycle.

**For the indirect measuring method**, surveys are the most important tool for collecting data and information. The Quality surveys used in the college for all programs are built in the university Electronic Quality System (Jadeer) and are categorized for two services:

- The stakeholders' (students, alumni, and employer) satisfaction with the quality of the educational process.
- The stakeholders' (student, faculty, and administrative staff) satisfaction with the university's services and environment.

The program assesses its performance annually by using validated surveys, including:

- The students' satisfaction with the quality of the courses.
- The students' evaluation of the program (at the Middle of the Program)
- The students' evaluation of the program (at The End of Program)
- The graduate's evaluation of the program
- The employers' evaluation of the program's graduates
- The satisfaction with the services and environment of the University (Students, Faculty,
- and administrative staff)

The surveys are activated through the electronic quality system (Jadeer), within a time plan announced by the Measurement and Evaluation Administration of Development and Quality Deanship.

To increase the number of responses in the surveys at the graduate's level and for the faculties and administrative staff satisfaction about the University Services and Environment, the system surveys are re-built using google forms and delivered to the stakeholders.

By specific performance levels and assessment plans, the program measures and verifies learning outcomes. A variety of mechanisms are used by the Communications engineering program to evaluate courses and prepare reports. Students in the Electrical Engineering department are assessed directly and indirectly through oral and written tests, presentations, discussions, and by observing their performance and responsiveness. Students are evaluated on their ability to apply their learning through experiments, projects, and research. Evaluation techniques and learning outcomes measurement vary according to the program's nature. Students are assessed using different methods such as quizzes, midterms, Final exams, Assignments, and oral exams.

Each component has a weightage for different learning outcomes. These mechanisms include questionnaires related to course evaluations and the evaluation of the student's educational experience. It is necessary to carefully link the CLOs of each course to the PLOs to measure student achievement in various PLOs. The accreditation unit and all faculty members have agreed to use the following assessment methods: Written Exams, Oral Exams, Discussions/Contributions, Experiments, (Mini) Projects, Presentations, Reports, and Homework.

While other assessment methods are available, faculty members chose these because they are directly related to the PLOs. It is important to carefully examine the assessment methods to determine the suitability of the selected Teaching/Learning Strategies and the assessment method for the Communications engineering program objectives. The assessment methods for the knowledge domain, which includes the K1 to K4 PLOs, are also compatible with these strategies. They include homework, written exams, oral exams, presentation reports, and oral presentations.

When moving to the following learning domain "Skills" which includes the S1 to S5 PLOs, the assessment methods are enhanced to contain more suitable methods to cover this learning domain together with those for the previous domain. The added assessment methods include class projects, practical exams, class discussions, and solving problems on the board by students. Finally, for the learning domain "Values" which includes the V1 and V2 PLOs, the assessment method is enhanced by adding oral presentation and class project. The following table illustrates the alignment and matching between the assessment methods in the Communications engineering program with its PLOs.

| N | Learning domains and learning outcomes | Assessment strategies | |
|---|---|---|---|
| | **Knowledge and Understanding** | **Direct** | **Indirect** |
| K1 | Define knowledge of mathematical concepts including differential and integral calculus, probability, and statistics, along with their applications in the field of Communications Engineering. | Written exams, mid-session exams, homework's, and quizzes. Graduate project, training reports, oral presentations, and project report. | - Course Evaluation Survey<br>- Students Mid Program Evaluation Survey<br>- Students Final Program Evaluation Survey<br>-Employers Survey<br>- Alumni Survey |
| K2 | Recognize electrical engineering principles including processes, materials, techniques, and practices in the field of Communications Engineering. | | |
| K3 | Identify specialized knowledge based on new developments related to the field of Communications Engineering. | | |
| K4 | Integrate knowledge of research methodologies in reports and research related to the field of Communications Engineering. | | |
| | **Skills** | | |
| S1 | Apply Basic concepts, theories, and mathematical principles to solve complex problems related to the field of Communications Engineering. | Assessment of the methodology in seeking solution through all courses, | |
| S2 | Conduct complex practical tasks and procedures related to Communications Engineering by applying advanced processes, techniques, tools, and instruments. | Exams, Homework, Quizzes, Analytical reports, Lab reports | |
| S3 | Design a system, component, or process to solve Communications Engineering problems while considering realistic constraints (cultural, social, environmental, economic, health, and safety). | Homework assignments, Solving problems, Graduate project report, and oral presentation | |
| S4 | Evaluate contemporary issues and problems in Communications systems, components, and processes using critical thinking and creative solutions in various complex contexts. | | |
| S5 | Communicate effectively to demonstrate theoretical knowledge comprehension and specialized transfer of knowledge, skills, and complex ideas. | | |
| | **Values, Autonomy, and Responsibility** | | |
| V1 | Execute teamwork and leadership skills through creating a collaborative and inclusive environment while establishing goals to meet and planning tasks. | Project report, Oral presentation of projects.<br>Final lab. Exam | |
| V2 | Demonstrate commitment to professional and academic values, standards, ethical code of conduct as experts in the field of Communications engineering. | | |

### 2.1.7.1.    Assessment Plan for Program Learning Outcomes (PLOs)

The procedure followed by the Communications Engineering Program to measure the students' achievements in the Program Learning Outcomes (PLOs) consists of the following steps.

| No | Steps | Time | Responsible |
|---|---|---|---|
| 1. | Each course coordinator formulates a set of Course Learning Outcomes (**CLOs**) based on the course contents listed in the study plan. | At the beginning of an academic year following the process of updating the **CLOs** if required. | Course coordinator prepares the Course Specification, revised by internal quality reviewer |
| 2. | The formulated **CLOs** are then linked to the appropriate **PLOs**. | | |
| 3. | A set of teaching and assessment strategies is then assigned to each **CLOs**. All the formulated CLOs and the related teaching and assessment strategies are listed in the Course Specifications. | | |
| 4. | The assigned assessment strategies are utilized during the semester to assess the students' achievements in various **CLOs**. | During each semester. | The course coordinator and revised by program committee |
| 5. | For each course, the student's achievement in each **CLO** is reported in the Course Report. The student's achievement in each **PLOs** is calculated as the overall achievements in all the related **CLOs**. Additionally, improvement actions related to the **CLOs** and student course survey, that did not achieve the target score are suggested by the course coordinator and listed at the end of the Course Report. The target score of each **CLOs** is at 70% and the target rate for course survey items is 3.75 as the minimum requirements for achievement. | At the end of each academic year | The course coordinator |
| 6. | For the entire program, the students' achievement in each Program Learning Outcome (**PLOs**) is calculated as Direct assessment for the overall the achievement in all the related courses, according to the program learning outcome assessment plan. | At the end of each academic year | **PLOs** measurement committee |
| 7 | In addition to the direct assessment method listed above, the indirect assessment for Program Learning Outcomes (**PLOs**) is calculated through various surveys, including course surveys for | At the end of each academic year | **PLOs** measurement committee |

| | | | |
|---|---|---|---|
| * | each course linked with the Course Learning Outcomes (**CLOs**), mid-program surveys, final program surveys, alumni surveys, and employee surveys. The results of these surveys are included in the **PLOs** Assessment Report as indirect assessment results. | | |
| 8. | Relative weights are assigned to direct and indirect measurements for program learning outcomes through the **PLOs** measurement committee. **PLOs** measurements are analyzed based on actual values, and then a developmental plan is formulated. Reports on the results are included in the Annual Program Report (**APR**). The internal review committee has finally revived all the program reports | At the end of each academic year | PLOs measurement committee |
| 9 | The Improvement Plan will be applied next academic year. The impact of each action (listed in the Improvement Plan) on the related course is reported in the Course Report for the next academic year. The overall assessment of the impact of the applied Improvement Plan on the program is reported in the **APR** | At the end of each academic year | Course coordinator **PLOs** measurement committee Program committee |

### 2.3.3.Key Performance Indicators (KPIs)

Performance indicators are important tools for evaluating the quality of educational institutions and programs and monitoring their performance. Key performance indicators (KPIs) are measured using several tools, such as surveys, statistical data, etc. according to the nature and objective of each indicator.

The National Center for Academic Accreditation and Assessment (NCAAA) has (11 indicators) at the program level, that contribute to measure the performance of the academic program, all of which are consistent with the program accreditation standards (Alignment matrix for each program is required). KPIs are measured using different methods based on the objective of the KPI including surveys and statistical data, etc. KPIs are measured during the academic year by Program Surveys & Performance Indicators Committee to evaluate the quality of academic programs and monitor their performance as follows:

- Analyze the KPIs results to identify strengths and weaknesses.
- Prepares a comprehensive report on the program KPIs that includes the following points:
  - Measurement.
  - Results.
  - Analysis (identifying strengths and weaknesses).
  - Comparisons by positions.
  - Positive or negative change in performance.
  - Recommendations.
  - Development plan.

Communication Engineering programs KPIs:

The period to achieve the target (one) year(s).

| No. | KPIs Code | KPIs | Targeted Level | Measurement Methods | Measurement Time |
|-----|-----------|------|----------------|---------------------|------------------|
| 1 | KPI-P-01 | Students' Evaluation of Quality of learning experience in the Program | 4 out of 5 | Average of overall rating of final year students for the quality of learning experience in the program | - By the end of academic year |
| 2 | KPI-P-02 | Students' evaluation of the quality of the courses | 4 out of 5 | average students overall rating for the quality of courses on a five-point scale in an annual survey | - By the end of academic year |
| 3 | KPI-P-03 | Completion rate | 80% | Proportion of undergraduate students who completed the program in minimum time in each cohort | - By the end of academic year |
| 4 | KPI-P-04 | First-year student's retention rate | 90% | Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year | - By the end of academic year |
| 5 | KPI-P-05 | Students' performance in the professional and/or national examinations | 70% | Percentage of students or graduates who were successful in the professional and/or national examinations, or their score average and median (if any) | - By the end of academic year |
| 6 | KPI-P-06 | Graduates' employability and enrolment in postgraduate programs | A. 85% B.5% | Percentage of graduates from the program who within a year of graduation were: a. employed b. enrolled in postgraduate programs during the first year of their graduation to the | - At the beginning of the academic year |

| No. | KPIs Code | KPIs | Targeted Level | Measurement Methods | Measurement Time |
|---|---|---|---|---|---|
| | | | | total number of graduates in the same year | |
| 7 | KPI-P-07 | Employers' evaluation of the program graduate's proficiency | 4 out of 5 | Average of overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey | - At the beginning of the academic year |
| 8 | KPI-P-08 | Ratio of students to teaching staff | 1:20 | Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program | - At the beginning of the academic year |
| 9 | KPI-P-09 | Percentage of publications of faculty members | 80% | Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program | - By the end of academic year |
| 10 | KPI-P-10 | Rate of published research per faculty member | 4 out of 5 | The average number of refereed and/or published research per each faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year) | - By the end of academic year |
| 11 | KPI-P-11 | Citations rate in refereed journals per faculty member | 4 out of 5 | The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published ) | - By the end of academic year |

| No. | KPIs Code | KPIs | Targeted Level | Measurement Methods | Measurement Time |
|---|---|---|---|---|---|
| 12 | EEP-P-01 | Faculty member satisfaction questionnaire with the program's organizational climate | 4 out of 5 | Average of beneficiaries' satisfaction rate of program's organizational climate (clearly of responsibility, organization, rewards, …etc. ) on a five-point scale in an annual survey. | - By the end of academic year |
| 13 | EEP-P-02 | Percentage of program members participating in community service | 100% | Percentage of full-time faculty members who participated in at least one community activity during the year to total faculty members in the program. | - By the end of academic year |
| 14 | EEP-P-03 | Percentage of student certifications in extracurricular activities (future target: X). | 95% | The percentage of students who obtained a certificate, divided by the total number of certificates awarded to students (future X) | - By the end of academic year |
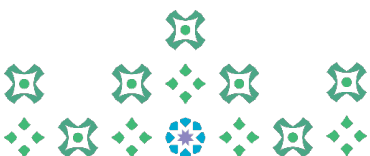
## 2.4.  Check

At this stage, The Program Learning Outcomes Assessment & Measurement Committee collects and analyzes the results of measurements for the learning outcomes to identify points of strengths and areas of improvement in the program. For this process the following reports are required:

- Course Report.
- Field Experience Report.
- Annual Program Report, including:

  - Learning Outcomes Measurement Results.
  - Surveys Results.
  - KPIs Results.

## 2.4.1. The Course Report

It is required as one of the course portfolio files that is prepared be the course instructor. The course report includes number of elements:

1. Course Delivery, including:
   -Topics not covered (if any) and their impact on learning outcomes and the compensating actions.
   -Teaching strategies and assessment methods.
   -Methods of verification of the credibility of students' results.
2. Students' results, comments, and recommendations on the results.
3. Course learning outcomes assessment results table and recommendations.
4. Students' evaluation of the quality of the course
5. Difficulties and challenges that faced faculty members while teaching the course.
6. Course improvement plan including improvement actions and plans for the next semester/year.

The course report is belt on the electronic quality system (Jadeer) with all other portfolio files upload as follows:

- Updated CV for the instructor.
- Course specification
- Midterm and final exams and model answers
- Sample of students' grades in midterms and final exams.
- Sample of students grading rubric in practical Exams and assignments. • Exam peer evaluation.
- Students' success rate in the course.

The program director has an access on the system to reach all files and deliver them to the different program committees as the responsibility of each committee.

## 2.4.2. The field experience training

College of engineering has a training guideline by the field experience training unit are shown in the following QR code.



For the field experience training report, training guidelines forms are filled by the faculty member in participation with the field supervisor. The field experience training report includes the following number of elements:

1. Training delivery and assessment, including:
   - o   - Field experience and supervisor identification.
   - o   - Training and assessment methods.

- o  - Differences in evaluation and verification of the credibility of students' results.

2. Students' results and comments and recommendations on the results.
3. Learning outcomes assessment results and recommendations.
4. Students' evaluation of the quality of field experience training and supervisory staff.
5. Difficulties and challenges and their impact on the program and the compensating actions taken.
6. field experience training improvement plan including improvement actions and plans for the next semester/year.

## 2.4.3. Annual Program Report

The program annual report will be filled by the program director in coordination with the members of the program committee. The annual program report includes number of important statistics and results, which contribute to drawing the road map for the program and identifying strengths and areas of improvement, and the recommendations that are detailed in the implementation procedures of the program. The annual program report main elements are:

1. Implementation of the previous action plan.
2. Program Statistics, including Students statistics and Analysis of program statistics.
3. Program learning outcomes assessment with The Program Development Plans prepared be the Program Learning Outcomes Assessment & Measurement Committee and attach them to the annual program report.
4. Summary of course reports, focusing on Teaching of planned courses and their reports, Courses with variations, and Result analysis of course reports.
5. Program activities and the analysis of the evaluation results in the field of Student counseling and support, Professional development activities for faculty and other staff, Research and innovation, and Community partnership.
6. Programs evaluate and analyze conducting evaluation surveys and aggregated results, as follows:

- Results of the student evaluation of the courses and the developmental recommendations.
- Results of the student evaluation of the program and the program response.
- Results of any other evaluations and the program response.
- Results of the program key performance indicators

The process of quantitative data analysis begins with calculating the performance result to determine the extent to which the indicator has achieved its target value during the measurement period and the extent to which the program has achieved the targeted outcomes. The process of benchmarking for the program is done, according to what has been stated by the program committee in the planning stage, through comparing the actual values of performance indicators to the previous targets and calculating the result using fixed equations based on the polarity of the indicator, then analyzing the gaps and including the improvement proposals within the program development plan.

7. Difficulties and challenges that faced the program, their impact on the program and the compensating action taken.

8. Program improvement plan, with consideration to the following:

- Priorities for improvement.
- Actions.
- Actions responsibility.
- Date (end and start).
- Achievement indicators.
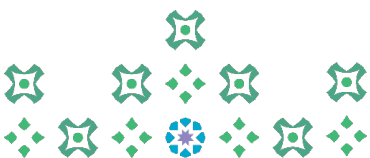- Target benchmark.

**Field Experience Report**

**Course Report**

**Annual program Report**

## 2.5. Act

### 2.5.1. The Program Self-Evaluation Scales (SES)

At this fourth stage of the Quality Cycle, a Self-Evaluation Scales for Programs, that is merged within the Self-Study Report, used to conduct an evaluation objectively based on program quality assurance standards. The SES used for planning, self-review, and supporting quality improvement strategies for academic programs. Self-evaluation procedures begin in the middle of the academic program period (i.e.: two years before applying for accreditation and before self-study preparation).

The Main Committee for Accreditation assigns the evaluation of each standard to the sub-committees. The evaluation of the quality level is based on specific elements that the evaluation process depends on for all the criteria listed under each standard. These elements of evaluation of the criteria are composed of the following:

- The extent of availability of the criterion elements and components
- The quality level of application for each element.
- The regularity of application and assessment, and the availability of evidence.
- The continuous improvement and level of results in the light of indicators and benchmarks
- The Excellence and creativity in the elements of the criterion practices

**Form for Evidence of the Program Accreditation Standards**

The quality of program performance is evaluated in two steps:

1- Evaluation of the criterion.
2- Evaluation of the standard.

It is to be noted that no program shall be admitted for accreditation unless it has obtained a compliance level of at least (3 points) in each of the five standards and in each of the essential criteria.

**The Program Accreditation Standards:**

| No. | Main criteria | Sub-Criteria | No. of Criteria |
|---|---|---|---|
| 1 | Program Management & Quality Assurance | Program Management | 9 |
| | | Program Quality Assurance | 3 |
| 2 | Teaching & Learning | Learning Outcomes | 5 |
| | | Curriculum | 7 |
| | | Quality of Teaching and Students' Assessment | 6 |
| 3 | Students | Students | 7 |
| 4 | Teaching Staff | Teaching Staff | 6 |
| 5 | Learning Resources, Facilities & Equipment | Learning Resources, Facilities & Equipment | 5 |
| Total | 5 | 8 | 48 |

## 2.5.2. The Program Self- Study Report (SSRP)

The periodic self-study review of the academic program is considered an entry point to continuous improvement of the performance, and preparation of the necessary development plans. On the other hand, the SSRP is considered one of the most important components of the accreditation requirements that are submitted to NCAAA, as it provides a clear and comprehensive idea of the reality of this program and helps the external review team in evaluating the performance and the extent to which the specified criteria have been met.

The following is a QR code for the SSRP form.

**Purpose of the Program Self-Study**

- Evaluating the performance of the academic program and achieving the desired goals.

- Determining the quality level of the program outcomes and the extent to which the study plan objectives are achieved.

- Continuous planning to develop the program outcomes and strengthening the bonds with the community and meeting its needs.

### 2.5.3. The Importance of Self-Study

The SSRP is the core document for both the internal and external evaluation of the academic program and the cornerstone in the development of the academic process. This is achieved through the following:

- The participation of all faculty members and employees in preparing and writing the SSRP, as quality is a collective responsibility.

- Identifying strengths and areas of improvement and enhancing transparency through internal quality reviews.

- Committing to making distinguished academic and scientific changes aimed at building a culture of distinguished learning in the program.

### 2.5.4. Stages of the Self-Study Process

Stage 1: Providing the Necessary Resources:

This stage aims to provide the necessary human and financial resources to start preparing the program self-study. Also, form the main committee for accreditation standards according to the formation attached in the following QR code.

Stage 2: Reviewing the Academic Program:

The purpose of this stage is to review the basic components of the academic program in accordance with the requirements of academic accreditation and identify strengths and areas of improvement.

Stage 3: Preparing the Self-Study Report (SSRP):

In this stage, the program prepares a written document of the self-study and supporting annexes (paper or electronic), including sufficient evidence that proves fulfilling the standards of program accreditation, and completing all the contents of the (SSRP) form.

The Main Committee for Accreditation in the program shall divide the preparation of the SSRP among the sub-committees that were formed with respect to each of the program accreditation standards. Each sub-committee prepares an initial draft of the SSRP for the assigned NCAAA standard, including all the supporting data and evidence.

The Main Committee for Accreditation shall unify the reports of the sub- committees into one report, while ensuring the consistency of its contents, eliminating repetition, and completing shortcomings.



**Figure 3. Stages of the Self-Study Process**

After completing the SES and SSRP, the program shall obtain the approval of the university administration to apply for national academic accreditation and sign the contract, then implements the steps as in the University Quality Management System to reach the target for accredited Programs for college of Engineering.



**Figure 4. the steps to reach accredited Programs after sign the contract.**