Kingdom of Saudi Arabia
Jazan University
College of Science

Quality Assurance System Manual
Postgraduate Programs
College of Science
Jazan University, Jazan,
Kingdom of Saudi Arabia

2023

PART 1: Introduction

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PREFACE

Quality Management System is a mechanism to evaluate and measure the promises and achievements of any institution provided in the mission and vision statement and reflected in the strategic directions of that institution. The main idea of it is to evaluate the satisfaction level of various stakeholders and increase their confidence by established procedures and methods. College of Science is committed to quality education and fulfilling the obligations enshrined into the mission and vision.

The Quality Management System described in this manual defines the various policy and procedure that ensures the quality assurance and management activities in line with good practices of NCAAA standards are implemented and evaluated. It clearly describes the responsibilities, scope, and domain of various activities.

This manual considers the application of a system of processes throughout all postgraduate programs in the college as well as the identification and interaction of these processes and their management. This quality management system is in line with the regulations and requirements described by the NCAAA. The policies and procedures defined here are applicable throughout all the activities and levels of organization and various units, committees and members are responsible for ensuring the implementation of this system

Part 1: Introduction

List of Abbreviations and Acronyms

APR	Annual Program Report
CATS	The Credit Accumulation and Transfer Scheme
CES	Course Evaluation Survey
CGPA	Cumulative Grade Points Average
CLOs	Course Learning Outcomes
CS	Course Specification
DAD	Deanship of Academic Development
EES	Experience Evaluation Survey
ECTS	The European Credit Transfer and Accumulation System
EQA	External Quality Assessment
GPA	Grade Point Average
HOD	Head Of Department
ILOs	Institute Learning Objectives
IQA	Internal Quality Assessment
JU	Jazan University
KPI	Key Performance Indicators
M.Sc.	Master of Science
NCAAA	National Commission for Academic Accreditation and Assessment
NQF	National Qualifications Framework
POs	Program Objectives
PES	Program Evaluation Survey
PLOs	Program Learning Outcomes
PP	Physics Program
PS	Program Specification
QA	Quality Assurance
QDAC	Quality Development & Accreditation Committee
QMS	Quality Management System
SAQF	Saudi Arab Qualifications Framework
SAR	Self-Assessment Report
SDL	The Saudi Digital Library
SES	Student Experience Survey
SSR	Self-Study Report

1- Definition of Quality Assurance

The customer concern today is for Quality products and services. Quality education is one such important service demanded today by the customer in the market. Education deals directly with the development of human resources. Postgraduate Degrees conducted in the National University system and the Private Sector Institutions are no exception to this requirement and demands quality, not only by the students, but also, to put it in the broader terms, the total stakeholders. The assessment is the performance evaluation of an institution/program and the accreditation is the certification conferred on the basis of such assessment. Quality assurance is primarily an internal responsibility system in an institution, and it depends heavily on the commitment and support of all those who involve in administration, management, and teaching. The procedures and standards outlined by the National Commission for Academic Accreditation & Evaluation (NCAAA) are based on the expectation that program would adopt such a responsibility system and take appropriate actions to ensure that high quality criteria are achieved. This manual is intended to guide and support those processes. Due to the importance of the higher education system for students, their families, and the wider community, one cannot simply assume that quality can be simply achieved. Quality must be verified by independent processes in order to guarantee to everyone concerned that high levels of quality are being accomplished. The NCAAA accreditation processes for higher education institutions and the programs provide this verification.

2- WHY QUALITY ASSESSMENT AND ACCREDITATION IS IMPORTANT FOR AN INSTITUTION/PROGRAM?

Quality Assessment and Accreditation is important basically for three reasons:

- Improvement for teaching, learning and student growth
- Institutional effectiveness and
- Accountability

Quality Assessment and Accreditation is important for teaching, learning and student growth:
Quality Assessment promotes self-reflection and evidence-based thinking about teaching, learning and student growth. Not only it leads to improvement in both the quality and quantity of learning by students it also responds to their needs for personal development.

Quality Assessment is important for Institutional effectiveness:
Quality Assessment offers a valuable means to evaluate current programs and policies, to innovate where necessary, and to ensure that they fulfill their mission.

Quality Assessment is important for Accountability:
It is important that institutions/programs respond fully and accurately to a variety of public demands for accountability regarding both learning and institutional quality and effectiveness.

The Aims, Goals and objectives of the assessment of a postgraduate program are as follows:

The fundamental purpose of a Quality Assessment and Accreditation of a program is to examine and enhance effectiveness and efficiency of that program. It also fulfills the requirement of accountability as a third public concern. Hence the, ultimate goal of a Quality Assessment is to examine and enhance an institution's/ program's effectiveness. In order to achieve this goal four objectives must be met. They are to:

- Improve teaching and learning
- Contribute to the personal development of students
- Ensure institutional improvement and
- Facilitate accountability

3- The Quality Assurance Framework of Higher Education in Saudi Arabia:

The National Center for Academic Accreditation and Evaluation (NCAAE), one of the centers supervised by the Commission, is an extension of what was previously known as the National Commission for Academic Accreditation and Assessment (NCAAA), which was established under the Royal Decree No. 7/B/ 6024 dated 9/2 / 1424H. NCAAA is an independent legal entity with administrative and financial governance that acts as the authority responsible for academic accreditation and quality assurance in higher educational of public and private institutions and programs.

National Commission for Academic Accreditation and Evaluation (NCAAA):

The National Commission for Academic Accreditation & Evaluation (NCAAE) has been established with responsibility for determining standards and criteria for academic accreditation and assessment and for accrediting postsecondary institutions and the programs they offer. The Commission is committed to a strategy of encouraging, supporting, and evaluating the quality assurance processes of postsecondary institutions to ensure that quality of learning and management of institutions are equivalent to the highest international standards. The six broad standards are applicable to both institutions and programs.

National Qualifications Framework (NQF) for Higher Education in Saudi Arabia:

The system for accreditation and quality assurance in the Kingdom of Saudi Arabia is designed to ensure that the quality of higher education is equivalent to high international standards and is widely recognized as such in the international academic and professional communities. The Framework helps to provide appropriate points of comparison in academic standards for institutions in their planning and self-review processes and for external reviewers involved in program accreditation processes and institutional reviews.

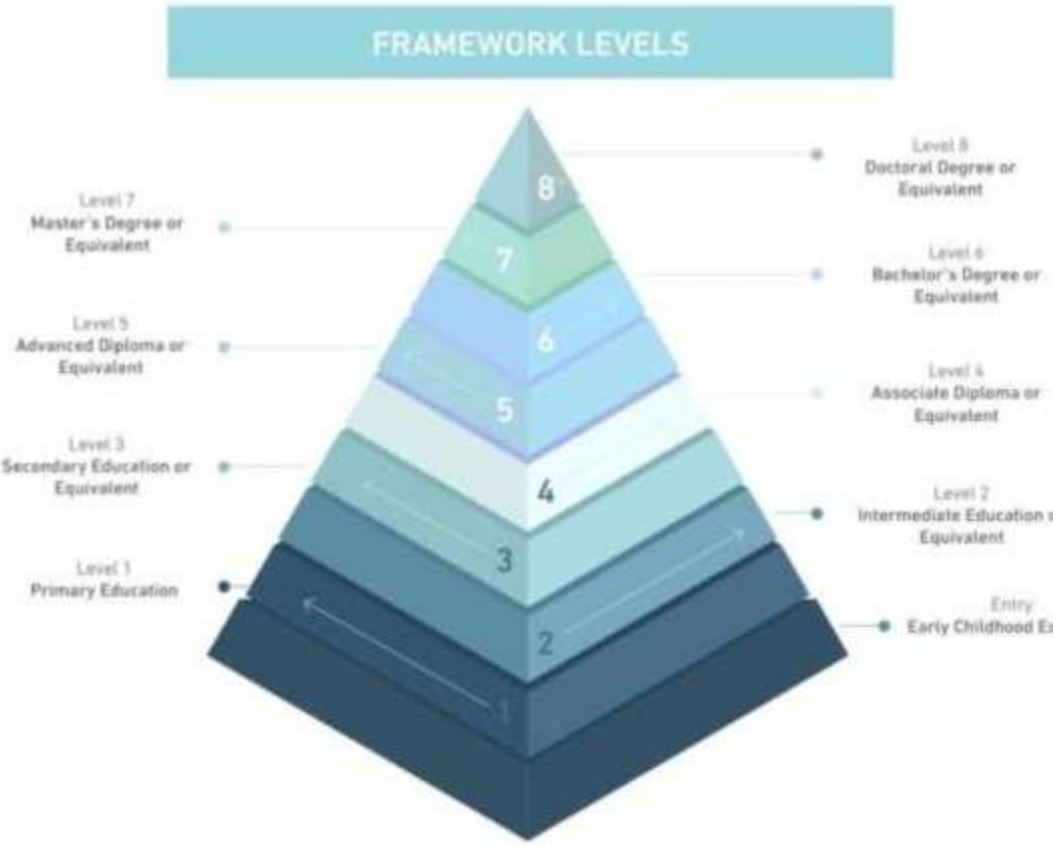


Figure 1: Shows the NQF Level Descriptors of educational, technical and vocational training programs and Master Programs comes under level 8.

Principal Elements in the Qualifications Framework:

The principal elements in the process are:

- Domains of Learning
- Teaching strategies
- Assessment methods

General requirements:

Department Council with consultation of College Council will create, document, implement, and maintain the quality assurance process and will continue to improve its effectiveness in line with NCAAA requirements, stakeholders' satisfaction, department operational plan and action plan.

Department Council will: -

a) Determine the required major processes in the quality assurance and their implementation throughout the program domain.
b) Determine process sequence and related processes.
c) Determine criteria, operational mechanism and effective process control.
d) Ensure adequate resources and accurate data to support process excellence and process monitoring.

e) Monitor, measure and analyze process achievement or KPIs achievement.
f) Execute opportunities for improvements, preventive and corrective control and continuous process improvement.

Postgraduate Program Approval and Review

Postgraduate program approval is the process by which new PG degree programs are checked against academic quality and standards expectations. Program review is the quinquennial process of reflecting on existing PG degree program delivery and student experience and planning for the next cycle of program enhancement.

Annual Monitoring

This process forms part of the University's evidence in assuring itself and outside agencies of the quality of its PG education provision and provides opportunity to reflect on current provision and to consider enhancements.

The Annual Report on PG program level has three key purposes:

(1) It allows Faculties to reflect on current research degree provision;

(2) It provides opportunity to share (good) practice across the University via the program

(3) It assures the quality of the research degree provision.

Periodic Review of PG Degree Provision

Periodic review is conducted at Faculty level and forms part of the Quality Monitoring and Enhancement (QME) Framework at Jazan University. It evaluates the operation and performance of a Faculty's entire PG degree provision, and is conducted every five years in accordance with a schedule determined by PG QME Subcommittee. However, PG program may be subject to more frequent review if significant concerns have been identified and/or where there has been significant change to the structure and delivery of its provision.

The scope of periodic review includes:

- The student lifecycle from recruitment and admission through progression review, examination and award;
- The student experience;
- The research environment and culture, and the resources available to support students and supervisors;
- Training and development for students and supervisors.

Postgraduate Program Quality System Manual:

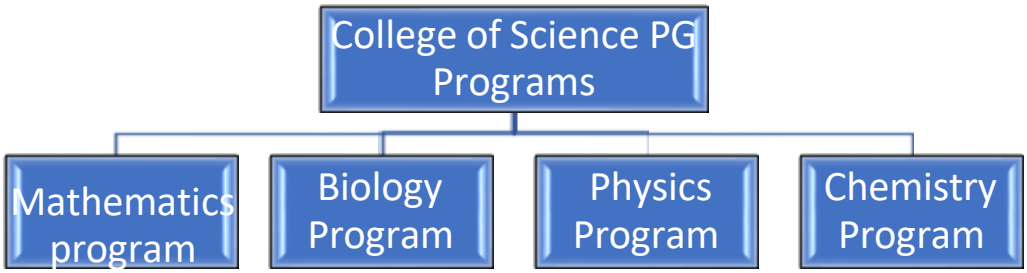
Postgraduate Program Quality System Manual is the main document to explain the policy and planning by program management. Program Quality System Manual is the main source of

reference other than NCAAA and University Quality Management System (MQS). The scopes of Quality System Manual are: -

- Scope of implementation for Program Quality Assurance.
- Quality policy and quality objectives of program.
- Not-applicable to NCAAA requirements (Need to be modified as per NCAAA latest modifications if any)
- Reference to procedures and other support documents.

Part 2

The postgraduate Programs offered by College of Science



	Mathematics	Biology	Physics	Chemistry
Mission	To produce competent graduates in mathematics and motivate scientific research to enrich and serve the surrounding society in view of KSA vision-2030.	Prepare qualified graduates in scientific research capable of competing in the labor market and contributing to community Development.	The Master of Science in Physics program seeks to achieve innovation and excellence in physics education and scientific research to prepare highly skilled graduates who meet the needs of development and society.	
Goals	1. Produce distinguished and highly qualified mathematicians. 2. Foster mathematical proficiency in students while enhancing their creativity and capacity for lifelong learning. 3. Develop critical thinking and problem solving skills to analyze and evaluate the validity of mathematical information. 4. Support scientific research in mathematics and allied disciplines. 5. Promote and stay abreast of the latest	**1- Design** a curriculum that integrates advanced theoretical and practical knowledge in biological science (Microbiology/ botany /zoology). **2-Enhance** critical thinking, investigation, and scientific reasoning capabilities. problem-solving and analytical skills through a structured and challenging academic environment. **3-Formulate** students for various career paths, including scientific	1.Provide high-quality advanced education in diverse fields of physics combined with training to extend the frontiers of physics and encourage innovation. 2.Implement high-quality research in interdisciplinary areas of physics, and enhance expertise in theoretical, computational and experimental physics. 3. Contribute to the workforce and serving the community.	

	scientific developments and methodologies in alignment with societal needs.	research and professional employment levels. 4-**Provide** students with the skills to design, conduct, and evaluate a research thesis that addresses real-world biological issues. **5-Motivate** the social responsibilities of students in an ethical framework for sustainable environmental and community development. 6- **Set up** students to serve as leaders and experts in biological science. 7- **Develop** competency of lifelong learning and interpersonal traits in the field of specialty.		

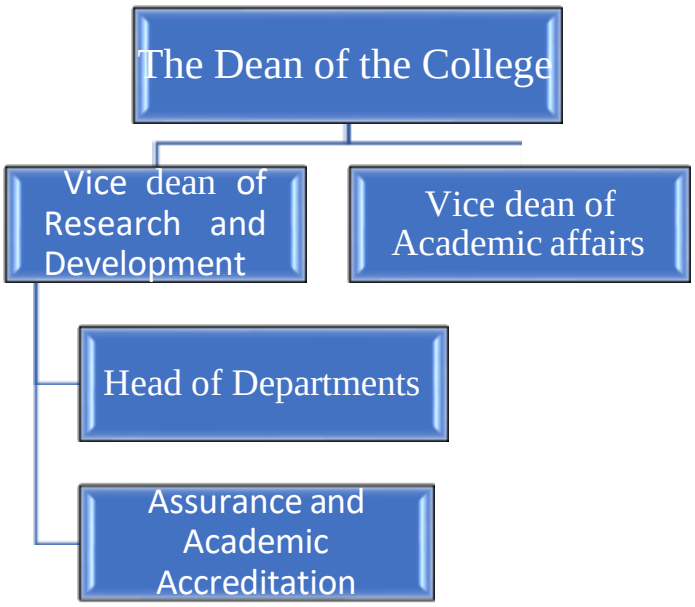
Stakeholders of the programs

Major stakeholders of the programs are:

- Students
- Faculty members and other staff
- Alumni
- Industry / Employers
- Others

The Quality Assurance Process of Postgraduate programs

There is a unified system for quality assurance system in all postgraduate programs this organized according to the following chart



Responsibility of the Head of Department

Head of Department, as executive officers of the academic department, contributes to the achievement of the University and faculty strategic plans by providing effective management and academic leadership within the department. These responsibilities include quality assurance of all programs, maintaining documentation relating to courses, monitoring staff performance, appraisal of teaching staff, and providing opportunities for individual staff development. They are also responsible for providing appropriate resources to support all teaching undertaken by the academic department. Specific responsibilities are:

1. Responsible and accountable for setting and advancing the academic strategy of the Department in line with Faculty and University strategic plans and direction.
2. Oversee, organize and develop the core activities of teaching, research, examining, advising and other service activities and knowledge transfer, consulting with all departmental colleagues.
3. Develop postgraduate programs in order to attract new students and markets.
4. Ensure the highest levels of quality, integrity and ethics in teaching, learning and research within the department.
5. Ensure that staff performance is managed appropriately and that fair workload allocation processes are in place.
6. Ensure all staff has access to the necessary support to enable them to contribute fully and develop their skills and experience.
7. Ensure a safe and healthy environment for both staff and students, and full compliance with health and safety requirements.
8. Ensure that University equipment/ facilities under the department´s control is properly maintained and serviced as required.
9. Enhance the quality and volume of research by encouraging and enabling demonstrable research

   achievement within the department.

The College Postgraduate Quality Assurance and Academic Accreditation Committee

This committee has the following duties:

1. Apply all quality standards in all direction in Postgraduate programs in the college to improve the learning outcomes according to NCAAA requirements.
2. Generalize all accreditation standards and eligibility requirements in all Postgraduate programs
3. Follow the process of program and course specifications preparation according to NCAAA forms.
4. Follow the preparation of all course reports and the results of Course learning outcome calculations and all the postgraduate program specific statistics.
5. Preparation and analysis of the questioners responsible for measuring the KPIs according to NCAAA models.
6. Follow the preparation of all annual program reports according to the NCAAA formats and discuss the results of program learning outcome assessment and program performance indicators (KPIs) and put the improvement and development action plan for all the postgraduate programs.
7. Supervising the accreditation activity performance in all postgraduate programs.
8. Supporting the continuous improvement in the program performances through follow up the recommendations obtained from Deanship of Academic Development (DAD).
9. Regulate the offering of workshops and training programs for improvement and develop of the teaching staff performance
10. Make monthly meeting to submit the meeting reports to the Vice dean of Research and Development to approve

The Program Postgraduate Quality Assurance Committee

This committee is constituted on the level of each postgraduate program. It involves members represents the department committees such as:

1- Representative of department quality committee (Quality coordinator)
2- Representative of department curriculum development committee
3- Representative of department academic advising committee
4- Representative of department scientific research & innovations committee
5- Representative of department student affairs committee
6- Representative of department training committee

7- Representative of department labs and equipment committee
8- Other teaching staff in the program

These committees are responsible for collecting and submitting all the evidences of the quality standards and support the accreditation committee to get all the required evidences.

Assessment principles

Assessment policy and principles

Each postgraduate program recognizes its responsibility to ensure the equitable treatment of all its students in assessment. To maintain a comprehensive assessment regime directed towards the fair and just assessment of students' performance against defined, published and externally endorsed criteria. Where appropriate, the detailed requirements of specific assessments may be modified to meet the needs of disabled students or those with specific needs. Such special assessment requirements would be identified during the admissions stage or when the special need was first recognized. Each program should have a varied diet of assessments designed into its courses, ranging from time-constrained examinations through to dissertations. A key element of the assessment methodology is the application of learning, and approaches which promote deep learning rather than shallow learning experiences.

Course assessment

The assessment for each course will vary according to the nature of the intended learning outcomes and how the teaching team judges these can best be assessed. The assessment is defined during program approval, and cannot be amended without re-approval of the course specification. The college-study plans and curriculum committee will actively review the balance of assessment used across the courses, to help promote the student learning whilst ensuring the intended learning outcomes are covered. An assignment must not be assessed as part of a course if the assignment has already been assessed and credit awarded as part of another course, i.e., no double-counting of credit for any item of student work. To ensure that all students are treated with equity, it is of key importance that all staff engaged in the assessment process undertakes their duties diligently and without the possibility of influence. So any member of staff involved in student assessment who has any form of relationship with any student being assessed must declare that potential conflict of interest to the Dean of College. The Dean will take such steps as is necessary to secure the integrity and equity of the assessment process. Students must also adhere to the assessment regulations.

Process of Assessment

Assessment is an ongoing process in all postgraduate programs. NCAAA regulations and forms are implemented for all documentations. These generally include reviews of departmental offerings, course content, textbooks, and examinations. Internally, all programs review its entire curriculum periodically, has dialogs with client departments, re-evaluates textbooks, keeps current on national curriculum trends, and studies course grade distributions each semester. In addition, faculty share and review examinations, regularly collect student evaluations of teaching,

assessment of learning outcomes for each course and report the scores of CLOs each semester from various exams. Programs also plan to get feedback from alumni and employers in a periodic manner.

Current Practices of Assessment:

Purpose: Conduct course, assess student performance and evaluate outcome attainment

Data Collected: This loop represents the traditional course offering, where an instructor teaches the course, issues grades, and evaluates student performance relating to each course outcome. Each instructor has mapped course learning outcomes (CLO's) to program learning outcomes (PLO's) based on knowledge of course content.

Assessment Method: Each instructor, for each course, uses a combination of indirect assessment (student and instructor post assessment surveys (to be implemented)) and direct assessment of student work through various activities and exams.

Evaluation Method: We use courses to evaluate attainment of each outcome. Student Outcomes vs. Courses, indicates which outcomes are covered in each course.
Assessments of the outcomes addressed in the courses in final semesters are used to determine the overall level of attainment of the outcome in the program.

Selected Courses Identified for Outcome Assessment

Final semester courses

Program Learning Outcomes (PLOs) assessment planning:
The necessary components of the assessment plan of all Programs are

- **PLAN**

CLOs Assessment Method

In this section, the explanation on how the PLOs is assessed using the CLOs assessment method (course assessment) will be introduced. Below are the major steps used in this assessment method (CLOs assessment method):

PLOs Assessment Plan using CLOs: The data are collected and evaluated every semester for PLOs assessment. An improvement plan report including a list of minor and major changes is then prepared according the evaluation results of PLOs and their corresponding CLOs. Minor changes can be implemented during the assessment cycle while the major changes can be implemented by the end of the assessment cycle timeline.

Setting target is an important key to the continuous improvement process:

It is highly recommended that you do not set targets until after the first cycle of data collection. Also, it is crucial to be realistic about your program's context.

Defining CLOs:

CLOs were defined with the involvement of all instructors and the consideration of the main topics and concepts of courses. All requirements and characteristics of Mapping CLOs to PLOs: After the development of CLOs, they were mapped to PLOs in order to ensure that CLOs have certain contribution to the PLOs at different levels in the program. **Course Assessment plan**: Each instructor prepares a course-based assessment plan (as described in the course specification) that describes which assessment methods will be used to assess which CLOs in order to accurately measure and evaluate learning outcomes. In other words, the assessment methods at the course level (exams, assignments, homework's, etc.) are designed to assess and evaluate the extent to which each CLO is being attained.

- **DO**

Teaching Strategies Plan: In course specification the appropriate teaching strategies and other educational practices (lecture, group discussion, projects, etc.) were specified and will be followed during teaching. Those teaching strategies are aligned with the CLOs and support the needs of students. The CLOs, assessment methods, and teaching strategies are considered as an integrated learning and teaching process.

Designing course assessment methods: To have an accurate measurement of CLOs attainment, all questions are designed according to CLOs. In other words, the instructors align the questions of all course's assessment methods to CLOs. Moreover, the levels of difficulties of questions must be very consistent with the level of learning in the CLOs.

For example, the introductory courses are mostly related to knowledge and comprehension levels while intermediate courses are related to Skills (applying, analysis and design levels of the bloom's taxonomy) (see the table of weight % of learning domain).

Procedures of identifying assessment methods for each learning outcome:
1. Align assessment method with outcome to be assessed.
2. For each outcome and means of assessment, criteria for success should be established which includes benchmarks that the program sets for the outcome.

- Criteria are most often stated in terms of scores out of 5, percentages, averages, or other quantitative measures.
- For each learning outcome describe where you would like to be within a specified time period (e.g. 10% improvement in student performance within two years).
- Also, determine what standards are required from students.

Conducting assessment and collecting data: The performances of students are then collected through exams, assignments, projects, etc. at the course level. More specifically, their performance in questions related to CLOs should be observed and analyzed in every course.

• ANALYZE

Evaluation Results: The instructors grade students' performances by CLOs. In other words, the grades of students for each CLO are reported out. By the end of the semester, the instructor prepares CLOs. An Excel template was prepared to make the process straightforward and it includes the analysis of data for all kind of exams and activities to get the scores and achievements of students in all CLOs with graphical depiction.

• Faculty should be the ones responsible for the analysis and interpretation of data.
It is important to summarize the results in a meaningful way so that they can be reviewed and actions needed to improve the program can be determined.
• Need to keep in mind the audience when analyzing results like who will access and use the data, and accordingly need to vary analysis and reporting procedures according to the identified audience

- **Based on our context, our target is defined as: A CLO is considered as Exemplary (E) if scored ≥ 4.5, Satisfactory (S) if scored ≥ 4, Adequate(A)) if scored ≥3.75, Unsatisfactory (U)) if scored < 3.75**
- **The % of student's achievement (the % of students who get or exceeded 75%) is considered as Exemplary if ≥ 90, Satisfactory (S) if ≥ 85, Adequate (A) if ≥ 80, Meet the criteria if ≥ 75, and Unsatisfactory (U) if < 75.**

Furthermore, the achievements of corresponding PLO's at the course level are calculated by using the mapping of CLOs to PLOs and the CLOs Achievements Report. Finally, the achievements of the program's PLOs are calculated using students' performances in CLOs.

- **ACT**

Designing Improvements: Using evaluation results of CLOs and PLOs, it is now important to design a set of improvements to improve the quality of the program as a whole. Designing improvements is done by the end of each semester. More specifically, each instructor uses the evaluation results of CLOs and PLOs to prepare course report that contains a list of actions to improve the curriculum and syllabi and the delivery of the course as well as the performance of the instructor. Further, the Program Curriculum Committee (PCC) with the Program Assessment Committee (PAC) meet with the staff members and approve a list of minor and major improvements. Minor actions can be implemented any time during the assessment cycle and may affect any aspect of the program (teaching strategies, exams, guidelines, policies, etc.). However, major improvements are kept for later discussion and approval. The cumulative major improvements are discussed with other stakeholders for final approval by the end of the assessment cycle. The main components of our improvement plan using CLOs assessment data are:

- **Actions to be taken**
- **Responsible people or unit**
- **Timeline: Starting date of implementation and deadline**
- **Rational**
- **Types of actions: Major or Minor**

Implementing improvements: The improvement plan designed in the previous point is then distributed by the department head to the responsible people for further actions. The assessment committee observes the implementation of the improvement plan. As mentioned above, the CLOs assessment method has several advantages such as direct assessment of PLOs, faculty engagement in assessment process, easy to implement, and semester based continuous improvement process.

In our approach, we enhanced PLOs assessment using CLOs by a set of procedures to maximize validity and accuracy of the assessment results. Below are the major activities that we did for this purpose:

- **Major actions are based on cumulative results over an assessment cycle rather than one semester data.**
- **Ensure that learning perspective to be learning outcomes oriented.**

- **Regular revision of the alignment of CLOs to PLOs to ensure better improvement process**
- **Assign a dedicated staff member as a course coordinator for each course. The main role of the instructor is to ensure that the same syllabus (content, topics, grading) are followed in more than one sections for the same course. The course coordinator also reviews the assessment methods at the course level to ensure that they are appropriate for the CLOs.**
- **Follow a unified grading policy and scheme to ensure that the student knowledge and skills are represented by the grade.**
- **Enhance the mechanism of course distribution to teachers to ensure that the right instructors with good experiences are teaching the appropriate courses.**

✓ At this point in the continuous improvement cycle, the planned changes should be implemented.

✓ These changes could be to the content of the curriculum, staffing, facilities, among others.

Implementing changes

Assessment Plan

- **Revision of intended learning outcome statement (s)**
- **Revision of measurement approaches**
- **Collection of and analysis of additional data and information**
- **Changes of data collection methods**

Curriculum

- ✓ **Changes in pedagogical practices**
- ✓ **Revision or enforcement of prerequisites**
- ✓ **Revision of course sequence**
- ✓ **Revision of course content**
- ✓ **Addition/deletion of course(s)**

Academic Processes

- **Modification of frequency or schedule of course offerings**
- **Improvements of technology**
- **Changes in personnel**
- **Implement additional training**
- **Other implemented or planned change**

Benchmarking

What is Benchmarking?

Benchmarking is the "continuous systematic process for evaluating products, services, and work processes of organizations that are recognized as representing best practices for the purposes of organizational improvement." -Spendolini, 1992 In Joseph Juran's 1964 book Managerial

Breakthrough, he asked the question: ***What is that organizations do that gets result so much better than ours?*** The answer to this question opens door to benchmarking, an approach that is accelerating among many firms that have adopted the total quality management (TQM) philosophy. The essence of benchmarking is the continuous process of comparing a company's strategy, products, processes with those of the world leaders and best-in-class organizations. The purpose is to learn how they achieved excellence, and then setting out to match and even surpass it. The justification lies partly in the question: "Why reinvent the wheel if I can learn from someone who has already done it?" However, Benchmarking is not a panacea that can replace all other quality efforts or management processes.

Benchmarking is a process of setting KPI figures against competitive internal and external goals, this might be benchmarking against your

9.2 The Evolution of Benchmarking The method may have evolved in the early 1950s, when W. Edward Deming taught the Japanese the idea of quality control. Other American management innovations followed. The term "benchmarking," however, was not coined by that time. The term "benchmarking" emerged when the idea took ground in US during 1980s when Xerox, Ford and Motorola became the pioneers of benchmarking in USA.

Benchmarking is the search for industry best practices that lead to superior performance".
There are three levels of benchmarking:
1- Internal benchmarking (within the program).
2- Competitive or strategic benchmarking (other program and competitors).
3- Benchmarking outside the university.

What can benchmarking do?

- Justify programs/services within student affairs
- Improve quality
- Demonstrate affordability
- Develop strategic plans
- Formulate policy
- Aid in making decisions

Benefits of Benchmarking
Benefits of benchmarking of programs:

1- Cultural Change
2- Performance Improvement
3- Realizing the status and enhance capabilities compared to others.

1. Cultural Change: Benchmarking allows organizations to set realistic, rigorous new performance targets, and this process helps convince people of the credibility of these targets. It helps people to understand that there are other organizations who know and do job better than their own organization.

2. Performance Improvement: Benchmarking allows the organization to define specific gaps in performance and to select the processes to improve. These gaps provide objectives and action plans for improvement at all levels of organization and promote improved performance for individual and group participants

3. Realizing the status: Benchmarking provides measures of the program status and hence suggest kinds of training and/or improvements. It also entails the development of Employees to make gap analysis between what they are doing and what best-in-class are doing. Closing the gap points out the needs of personnel to be trained to learn techniques of problem solving and improvement process.

Basic Benchmarking Methodology (Plan – Collect Analyze – Implement- Measure)

Explanation of PDCA Definition as used in the Evaluation of the Process Factor

The Deming Cycle (called the Shewart Cycle) is a set of activities (Plan, Do, Check, and Act) designed to drive continuous improvement. The Plan-Do-Check-Act (PDCA) cycle applies the scientific method to problem solving. The key is to use this as a cyclical process. However, most often it is not. Often the only action is to decide on a modification and to do it (PD). It is a systematic process management methodology that assures that processes are maintained at the best performance level achievable, given the present design of the process.

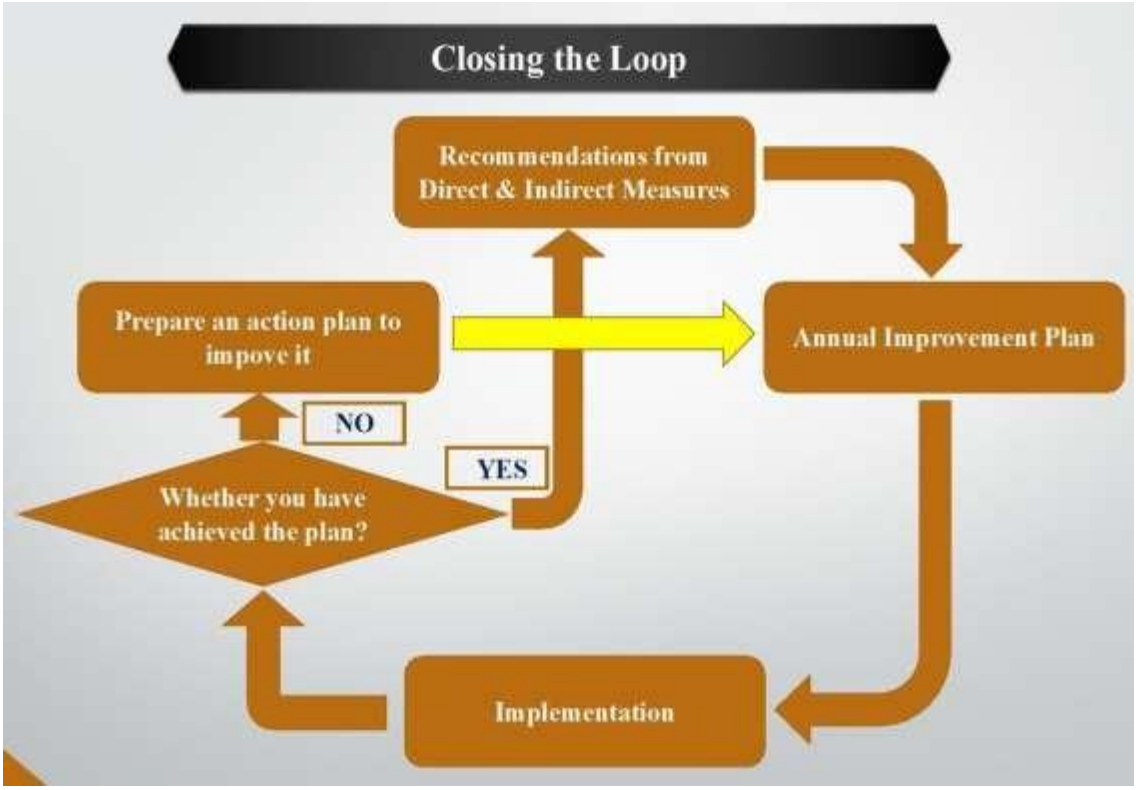
Plan (P):

Definition: Plan refers to the establishing of the objectives and processes necessary to deliver results in accordance with the expected output. It determines what needs to be done, when, how, and by whom. It signifies a set of intended actions, through which one expects to achieve a goal affecting the output, which is the focus. By making the expected output as the main focus, it emphasize on the completeness and accuracy of the specification which is also part of the improvement. In the plan phase, the problem solving team analyzes data to identify possible causes for the problem and then proposes a solution. Plan the process management system by linking the daily work to the institution, college, program or administrative unit strategy and stakeholders' requirements; determine and document the best steps for completing the work, what will be checked, how to check, how often, etc.

Do (D):
Definition: Do refer to implementing the new processes or Do the actions as specified in the plan.

Check (C):
Definition: Check refers to the analysis of the results of carrying out the plan and the measuring of the new processes and compares the results against the expected results to ascertain any differences. Check actual performance against the Process Management Plan (PMP) by measuring and reviewing the process outcomes (Y's) and key input and process variables (X's) on a regular, timely basis.

Act (A):
Definition: Act refers to analyzing the differences to determine their cause. Act when there is a gap between the "as-is" of do and the "should be" of plan and take appropriate steps to close the gap between planned and actual results. This may require normal control activities to identify and fix what went wrong. Each will be part of either one or more of the P-D-C-A steps. Determine where to apply changes that will include improvement. After passing through these four steps does not result in the need to improve, refine the scope to which PDCA is applied until there is a plan that involves improvement.



Programs' Process of Closing the Loop

Postgraduate Program Key Performance Indicators (KPIs)

Standard	Code	Key Performance Indicators	Description	Frequency
-1- Teaching and learning	KPI-PG-1	Students' Evaluation of Quality of learning experience in the program	Average of overall rating of final year students for the quality of learning experience in the program.	**Annual**
	KPI- PG-2	Students' evaluation of the quality of the courses	Average students' overall rating of the quality of courses in an annual survey.	**Every Semester**
	KPI-PG-3	Students' evaluation of the quality of academic supervision	Average students' overall rating of the quality of scientific supervision in an annual survey.	**Annual**
	KPI-PG-4	Average time for students' graduation	Average time (in semesters) students spend to graduate from the program.	**Annual**
	KPI-PG-5	Rate of students dropping out of the program	Percentage of students who did not complete the program to the total number of students in the same cohort.	**Annual**
	KPI-PG-6	Employers' evaluation of the program graduates' competency	Average of the overall rating of employers for the competency of the program graduates in an annual survey.	**Annual**
-2- Students	KPI-PG-7	Students' satisfaction with services provided	The average of students' satisfaction rate with the various services provided by the program (food, transportation, sports facilities, academic advising, etc.) measured on a five-point scale in an annual survey.	**Annual**
-3- Faculty members	KPI-PG-8	Ratio of students to faculty members	The ratio of the total number of students to the total number of full-time and full- time equivalent faculty members participating in the program.	**Annual**
-4- Research and projects	KPI-PG-9	Percentage of publications of faculty members	Percentage of faculty members participating in the program with at least one research publication during the year to total faculty members.	**Annual**

	KPI-PG-10	Rate of published research per faculty member	The average number of refereed and/or published research per faculty member participating in the program during the year. (Total number of refereed and/or published research to the total number of faculty members during the year)	**Annual**
	KPI-PG-11	Citations rate in refereed journals per faculty member	The average number of citations in refereed journals from published research (total number of citations in refereed journals from published research for faculty members to the total published research).	**Annual**
	KPI-PG-12	Percentage of students' publication	Percentage of students who: a. published their research in refereed journals. b. presented papers at conferences. to the total number of students in the program during the year.	**Annual**
	KPI-PG-13	**Number of patents, innovative products, and awards of excellence**	**Number of:** a. **Patents and innovative products** **National and international excellence awards obtained annually by the students and staff of the program.**	**Annual**

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