

Quality Assurance System Manual  
Master of Science in Biomedical Engineering  
Department of Medical Equipment Technology  
College of Applied Medical Sciences  
Majmaah University, Al Majmaah, Saudi Arabia

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## Abbreviations

AAS	- Academic Advising Survey
APR	- Annual Program Report
CR	- Course Report
CS	- Course Specification
DAS	- Direct Assessment Sheet
FES	- Field Experience Survey
FR	- Field Experience Report
FS	- Field Experience Specification
KPI	- Key Performance Indicators
PES	- Program Evaluation Survey
POES	- Program Outcome Evaluation Survey
PS	- Program Specification
SES	- Self Evaluation Scales of the Program
SES	- Students Evaluation Survey
SSRP	- Self-Study Report of the Program

## PART 1 - INTRODUCTION

### 1. Definition of Quality Assurance

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. The Significance of Quality Assurance

Quality assurance is both a process and a framework that aims at accomplishing excellence and transparency. The process intends to ensure quality in the attainment of the program's mission and vision and consequently this will lead to having program performance that is aligned with its purpose. The major goal of quality assurance is to have all programmatic functions performing at an optimum level including academics, students, support services, physical plant (i.e. buildings, classroom environment), research, and services to the local and regional community. With continuous evaluation for attaining high quality in all areas, the program will be well-positioned to adapt itself to changes and provide quality education to students.

### **3. Relationship of Quality Assurance to Accreditation**

Quality assurance is a continuous, ongoing process of monitoring outcomes and ensuring quality in all academic endeavors. If such a process is done properly, program operations will constantly evolve and adapt to environmental changes and social needs. Accreditation is mainly based on the evaluation at a specific period of time, highlighting programmatic quality and outcomes that demonstrate alignment of purpose with performance. As such, quality assurance can be considered as a prerequisite for accreditation.

Accreditation process, at the institutional or programmatic level, involves evaluation by an external body (such as ABET) or the internal body of Saudi Arabia (i.e. NCAAA) based upon a set of agreed standards. If the standards are met, accreditation is granted. It is worth mentioning that being accredited indicates that the institution and its programs are up to international standards, and it is essential to maintain such quality standards as part of the institution's ongoing and long-term performance improvement. Thus, it is unlikely that accreditation can be completely granted unless providing evidence that further steps to maintain the effectiveness and the quality of its programs through continual evaluation and assessment are provided.

### **4. The Quality Assurance Framework of Higher Education in Saudi Arabia**

Within higher education, accreditation plays a major role in quality assurance and institutional effectiveness. Thus, granting academic accreditation is advantageous locally and internationally. Starting with learning outcomes, accreditation supports the interests of students by ensuring that the educational programs offered have attained a level that meets international quality standards and it guarantees that the students have demonstrated a certain set of skills and abilities. Taken into account the rapid regional and international changes, the international competition, and the third millennium modern challenges associated with technology development and computer revolution, equipping the students with such skills will enhance their future opportunities and develop their competitiveness in the job market.

In terms of improving education quality, accreditation has become a critical target to be attained by all academic and professional communities in order to improve educational policies and experiences. The main challenge for the modern educational systems is not only to provide education, but also to make sure that the educational environment and its outcomes as a whole are of high quality. With the purpose of raising the quality and adequacy in addition to contributing to the national economy and development, some organizational arrangements for the Council of Ministers' Resolution No. 94 has approved the Education Evaluation Commission issued on 7/2/1438 AH. It stated that the commission is the competent authority in the Saudi Kingdom to assess and accredit education and training institutions and programs.

The National Center for Academic Accreditation and Evaluation (NCAAA), 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.

##### **5. National Commission for Academic Accreditation and Evaluation (NCAAA)**

The National Commission for Academic Accreditation & Evaluation (NCAAA) 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.

## 6. 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.

Formerly, Saudi Arabian Qualifications Framework (SAQF) and present National Qualifications Framework (NQF) is an important element in this system. It is intended to ensure consistency within the Kingdom in the standards of student learning outcomes regardless of institution attended, and to make clear the equivalence of those standards with those for equivalent awards granted by higher-education institutions in other parts of the world. 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 7.

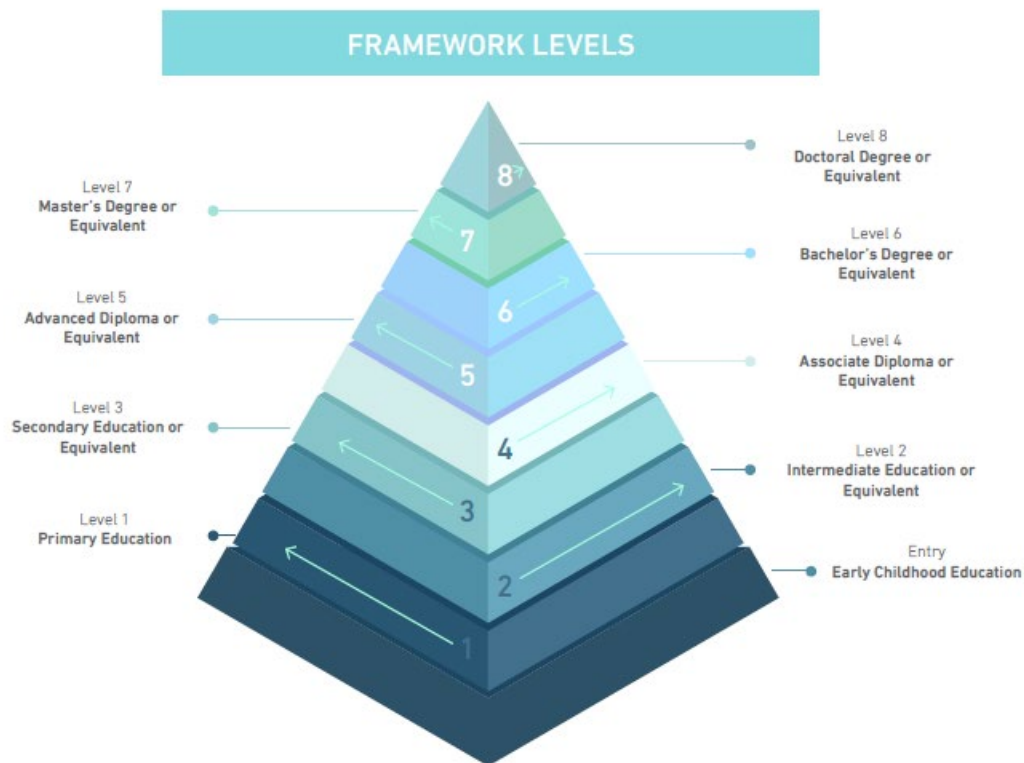


Figure 1. NQF Level Descriptors (Source: ETEC, KSA)

**7. Principal Elements in the Qualifications Framework: The principal elements in the framework are:**

- Domains of Learning
- Teaching strategies
- Assessment methods

**8. 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.

**9. Quality Manual**

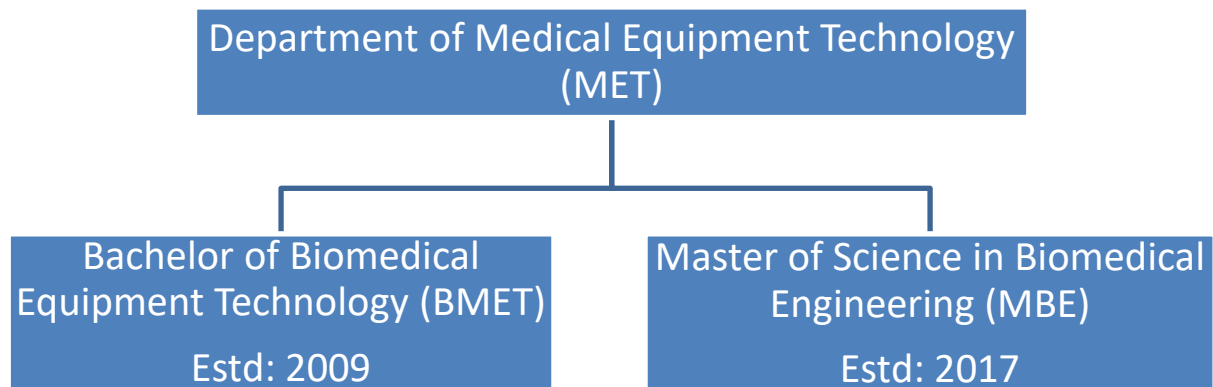
Program Quality Assurance Manual is the main document to explain the policy and planning by program management. Program Quality Assurance Manual is the main source of reference other than NCAAA and University Quality Assurance Manual. The scope of Quality Assurance Manual are: -

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



## PART 2: The Program Quality Assurance System

### Programs offered by the Department



## **A. Vision, Mission and Goals**

### Vision of the Department

Creativity and innovation in teaching medical devices technology, establishing local and national partnership and contribute to scientific research internationally.

### Mission of the Program – Master of Science in Biomedical Engineering

To prepare competencies in the Biomedical Engineering field through an educational environment supportive of scientific research and community service to cope with the evolution of health care systems and technique.

### Goals of the Program – Master of Science in Biomedical Engineering

Master of Science in Biomedical Engineering Program in Majmaah University enables students in:

- 1- Applying principles and tools from the physical sciences and engineering to biology, physiology and medicine;
2. Translating knowledge and innovations to clinical practice;
3. Maintaining a nationally recognized and rigorous graduate program;
4. Training biomedical engineers to work effectively in a wide range of settings, from academia to industry; and,
5. Advocating and disseminating BME to the public at large

## Objectives of the Program – Master of Science in Biomedical Engineering

1. Use principles of bioengineering, basic biomedical sciences, and statistics to solve complex engineering problems and tasks to cope up with the evolution in Health Care System.
2. To acquire learning skills and the ability to apply their bioengineering knowledge to evaluate biomedical technologies or systems in Biomedical Engineering.
3. To use the analytical tools to perform fundamental and applied research in biomedical engineering to produce the Novel and innovative products.
4. Able to positively impact on the society to develop ethical, economic and environmental skills to serve the community in a better way.

## Stake Holders of the Program

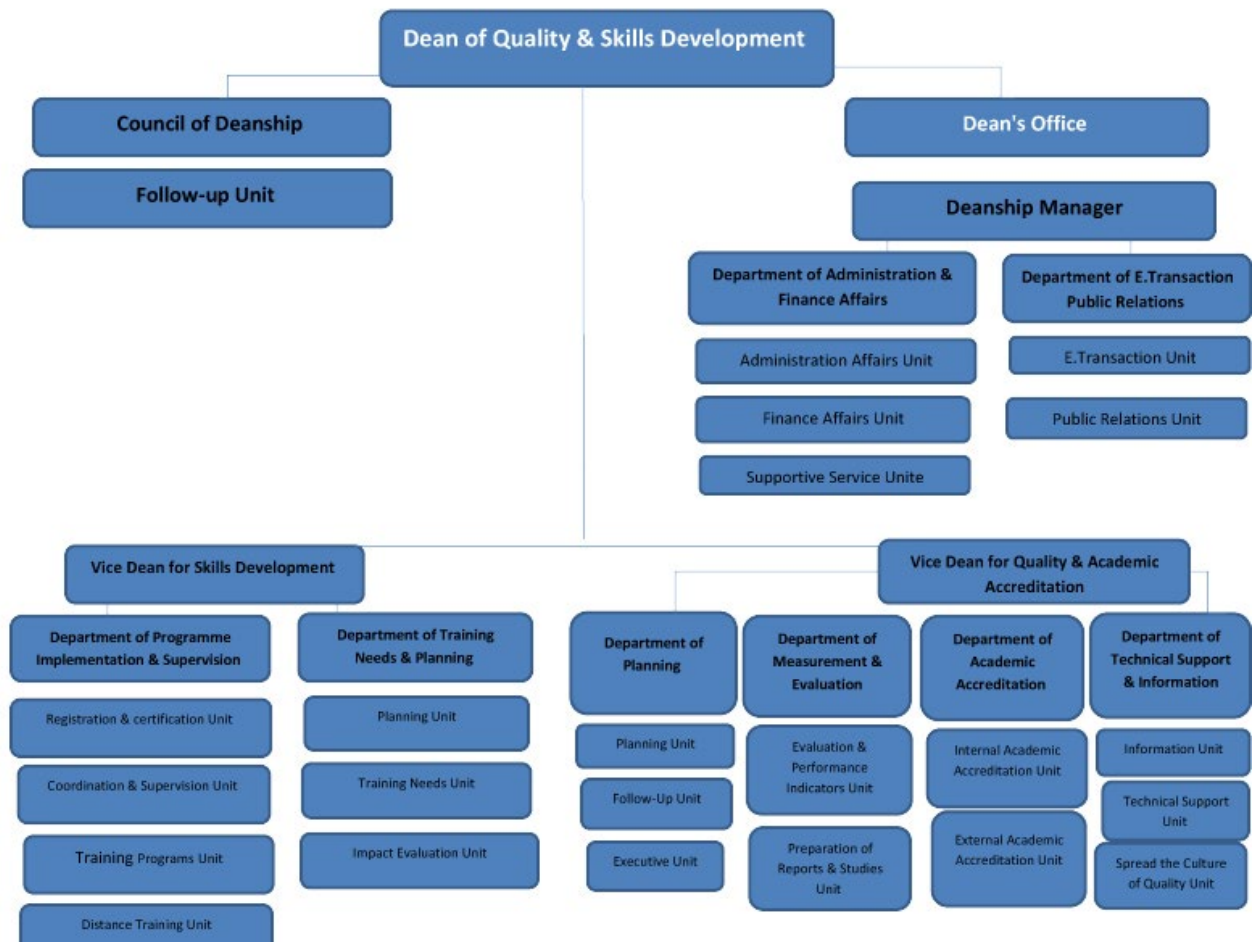
Major stakeholders of the program are:

- Students
- Faculty members and Other Staff
- Alumni
- Industry / Employers
- Saudi Commission for Health Specialties (SCFHS)
- Others

## Department Operational Plan

Department of Medical Equipment Technology has developed its operational plan and action plan 2020-2025 based on the Majmaah University's strategic plan and aligned with the college operational plan. The operational plan and action plan is annually reviewed based on the defined key performance indicators.

**Organizational Chart – University**



## Organizational Chart – Department

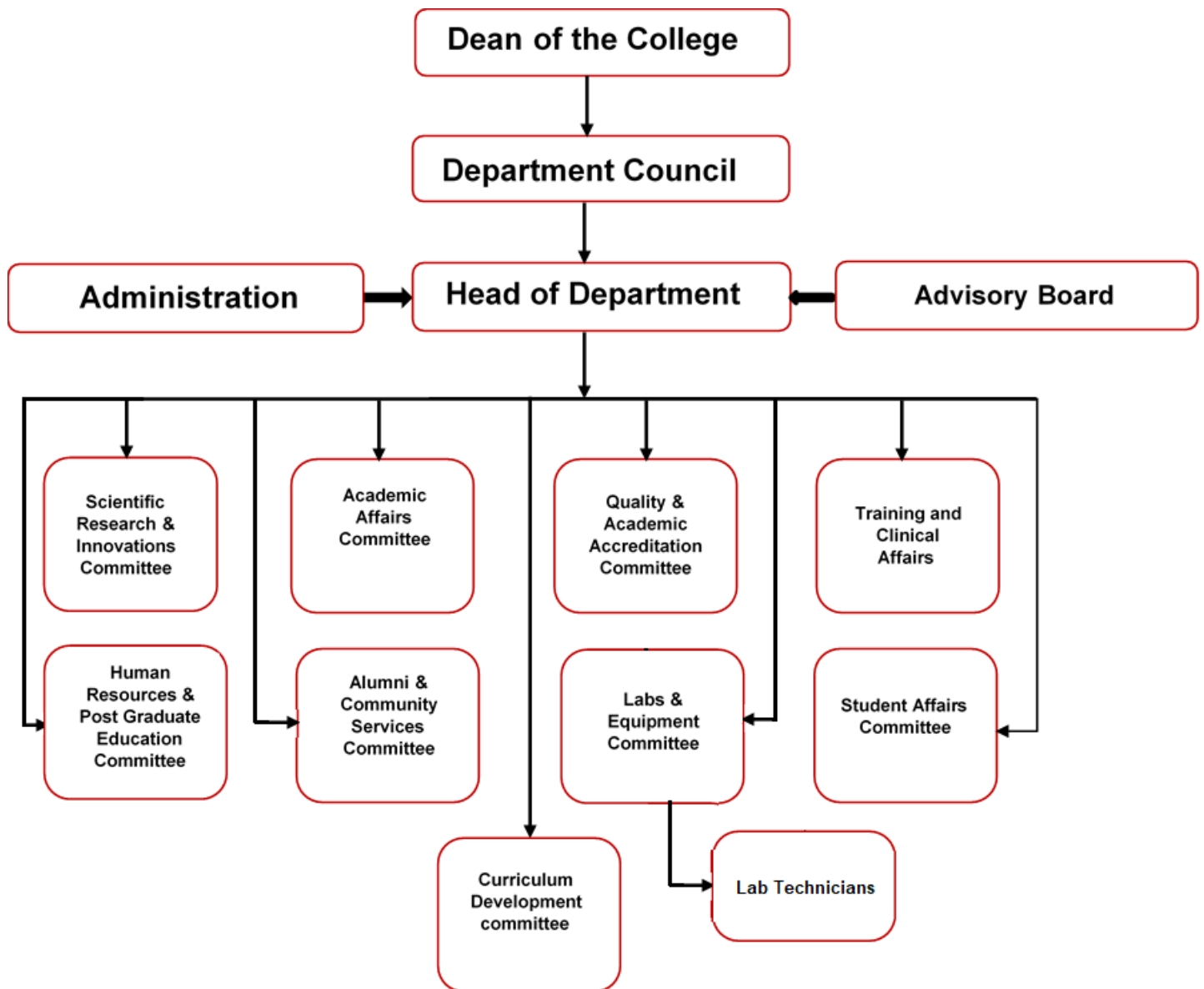


Figure 2. Organizational Chart of the Department

## **Tasks of the Department Committees**

### **1. Department Council**

1. Supervising the implementation of the working plans of the various activities of the department.
2. Follow up the completion of all academic accreditation requirements.
3. Preparing and updating the manuals of the department and program.
4. Holding a weekly meeting to discuss the reports of the quality management system in the department.
5. Follow-up and coordination with the Vice Dean of Quality and Skills Development (VDQSD) and quality and providing it with periodic reports.
6. Define the vision, mission and goals of the department and review it periodically.
7. Follow up the implementation of the department's action plan.
8. Identifying elements of strength and weakness in the various activities of the program and drawing up the necessary plans to benefit or address them.
9. Looking forward to the future of the department.
10. Activate the role of the advisory committee in the department.
11. Identify and implement training programs to develop teaching, research, and technical skills for faculty members.

### **2. Quality Assurance and Academic Accreditation Committee:**

1. Enhancing quality culture among faculty members, department staff and students.
2. Develop, manage and monitor quality control processes in the department.
3. Prepare, monitor, distribute, collect and analyze all five questionnaires of NCAAA.
4. Selecting key performance indicators and benchmarking of the program, analyzing it and building improvement plans based on it.
5. Select and follow up the independent auditor's report and develop improvement plans based on his / her recommendations.
6. Follow up the development of modern trends in methods, methodology and teaching techniques.

7. Preparing and revising reports of Program's Description, course specification, and course reports that are submitted by faculty members, and saving it electronically, and then sorting them in their specific files.
8. Organizing, supervising and preserving program's documentations in the academic room, in order to be ready prepared and organized at the time of the external auditors' surveillance stopover.
9. Ensure the preparation of copies of the student exams and copies of their answer sheets for all courses of the program each semester.
10. Regularly updating and revising all accreditation files, in order to be ready at any time during visit of scrutiny, and any allowed users.
11. Regularly organizing, preparing and submitting periodical reports of the committee's meeting, and also placing all these reports in the program's academic room.
12. Supervising and Preparing the Self-study report (SSR) for obtaining or updating national and international accreditations.
13. Arbitration of study plans from internal and external bodies to ensure access to an academic excellence plan, with emphasis on the fulfillment of the "SAQF".
14. Submit periodic reports on the scientific programs to the department council.
15. Preparing the organizational structure, job descriptions and tasks for each of its units.
16. Supervise the implementation of the administrative quality system and address the gaps that prevent its implementation.
17. Preparing plans to develop and improve the department's quality management system.
18. Working on achieving and applying the objectives and policy of administrative quality.
19. Making recommendations for improving financial and administrative performance.
20. Surveying the satisfaction of beneficiaries (internal and external) about the services provided.
21. Provide the necessary facilities to implement the system.
22. To identify, analyze and solve the employee problems.
23. Analyzing and treatment of complaints of beneficiaries and take the necessary corrective and preventive measures.

### **3. Student Affairs Committee**

1. Prepare a plan for the student guidance program and update it annually.
2. Raising awareness of the importance of academic, professional, psychological and social accreditation.
3. Raising students' awareness of supporting services and activities provided by the college and university and follow-up.
4. Receiving and responding to students' proposals or complaints and working to overcome them.
5. Prepare preventive programs to protect students from vulnerability.
6. Academic support (study the situation of students with default or low rates) and preparing academic programs to support students with unsatisfactory performance.
7. Follow-up of extra-curricular activities

### **4. Academic Affairs Committee**

1. Work on the preparation of study schedules; to be delivered on time.
2. Follow up the commitment of the departments with the regulations of the college in the preparation of the time table of the study.
3. Prepare and review the teaching load of faculty members.
4. Follow-up distribution of the courses of the departments on the halls assigned to each department.
5. Checking the suitability of the number of students in each section with the capacity of the class assigned for the course.
6. Follow up the work of the examination committees.
7. Receive the results from the teachers of the courses in preparation for adoption before monitoring.

### **5. Curriculum Development Committee**

1. Developing plans, curricula and scientific curricula in accordance with the needs of the society and the labor market.
2. Identify and implement training programs to develop teaching, research and technical skills for faculty members.



3. Determine the appropriateness of courses for practical life.
4. Submit periodic reports on the curricula and scientific programs to the department council.
5. Introducing good interdisciplinary programs.
6. Preparation and implementation of workshops for proposed or new programs in the department.
7. Follow-up updating the scientific references of the decisions.
8. Activating and integrating the work with electronic courses and digital content at all levels of study in the department.
9. Commitment to the Blackboard system to be the tool in delivering electronic course information.
10. Determine the appropriate training needs for faculty members and students to apply e-learning.
11. Supervising the department's website.
12. Urging faculty members to update their electronic pages on the department's website and to develop their educational materials and scientific production.

## **6. Human Resources & Post Graduate Education Committee**

1. Establishing a database of graduates of the department and update it periodically.
2. Collecting personal data of the students who are expected to graduate including their contact details
3. Attract graduates qualified to continue their higher studies.
4. Follow-up promotion of faculty members.
5. Collecting, tabulating and documenting the data of employers and employees, indicating how to contact them, and exploring the possibility of cooperation with them in recruiting graduates and creating effective partnership in this context.
6. Develop communication programs, whether electronic or otherwise, to strengthen the relationship between graduate students and employment.
7. Surveying (preparation, distribution and collection of questionnaires) graduates' opinions who have jobs in the public and private sectors outside the college.
8. Find an effective mechanism to provide employment opportunities for graduates in their fields of specialization.
9. Communicating with the public and private sectors to find opportunities to train students and qualify them to work in summer classes.

## **7. Labs and Equipment Committee**

1. Ensure the availability and operation of all laboratory equipment in the student laboratories.
2. Working to provide the required spare parts through guaranteed signed and approved maintenance and purchase contracts.
3. Supervising and following-up the updating of the equipment in the student labs, providing the necessary maintenance, and ensuring full care for their cleanliness.
4. Follow up the requests of faculty members for equipping laboratories and follow up the implementation of these requests.
5. Providing teaching and learning aids for students in laboratories.
6. Supervising the library of the department
7. Follow-up and work to provide sources of learning to meet all the needs of the program and its courses.
8. Ensuring an easy access to learning resources when students need them.
9. Collecting the needs of the teaching staff from the learning resources before using them in sufficient time and work to provide them.
10. Develop safety policies and regulations that achieve the safety in the department.
11. Monitor the inspection of the equipment and all safety measures in the laboratory.
12. Inventory safety equipment and organize the process of placing it in the correct place and maintenance periodically.
13. Ensure that safety measures are provided in laboratories and classrooms before starting the study in each semester.
14. Communicate with the main safety committee in the college regarding coordination, training courses and other works.
15. Development of emergency phone numbers - Preparation of awareness-raising instructional publications for students on safety procedures for various hazards (electrical and/ or chemicals) at the beginning of the academic year.
16. Follow-up safety procedures in laboratories and classrooms and Place the safety phone numbers in the laboratory.
17. Follow-up of all safety requirements in the Department - Raising awareness among the staff of the department and students of the importance of complying with safety instructions.

## **8. Scientific Research & Innovations Committee**

1. Develop an operational plan for scientific research in the department and follow up on its implementation.
2. Examining the files of applicants for postgraduate studies, sorting and nominating suitable candidates.
3. Follow-up of the comprehensive examination for doctoral students.
4. Supervising the performance of graduate students and submitting recommendations thereon to the department council.
5. Follow-up student scholarship, and submit periodic reports about them to the department.
6. Establishing and updating a database of research, scientific projects and conferences locally and internationally, in addition to patents, prizes, books and translations.
7. Encouraging publication in scientific journals with a global classification.
8. List of graduate students involved in research, projects, conferences, patents, and local or international awards.
9. Evaluation of the graduate programs in the departments periodically.
10. Prepare a list of graduates of the master's and doctoral students.
11. Prepare a list of the faculty members supervising the scientific theses of the higher studies and its numbers.
12. Conducting an annual evaluation of scientific research projects in the department and submitting recommendations to the Higher Studies and Scientific Research

## **9. Alumni & Community Services Committee Partnership**

1. Caring for social relations between faculty members and/or department.
2. Develop programs of internal and external visits to the college or department.
3. Receiving foreign delegations and organizing their residency programs and visits.
4. Caring for social relations between faculty members or the department
5. Develop practical programs to strengthen the relationship between the department and the community, and follow up their implementation.
6. Monitor and categorize scientific research projects carried out by the department and its members that contribute to the service of society and development plans.

7. Monitoring and tabulating training programs and scientific consultations, and cultural and awareness activities carried out by the department, which contribute to community service and development plans.
8. Supervising the activities that serve the community, namely: museums, astronomical observatory, permanent exhibition, greenhouse etc.
9. Encouraging and developing the spirit of initiative among the employees of the department and the students to maximize the return of the service role to society.
10. Activating the partnership between the program and the various community institutions, in particular public and private schools.
11. Deepening communication between the department (Program) and the bodies responsible for development plans in the Kingdom of Saudi Arabia.

#### **10. Clinical Affairs Committee**

Monitoring and assessing Hospital / Industrial training programs

#### **11. Responsibility of Department Head**

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. Refresh and develop new 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. Ensure that Program specification and report, course specification and report,
10. Program self-evaluation scale and Program Self-study report are going according to the latest versions of NCAAA and in the right way.
11. Enhance the quality and volume of research by encouraging and enabling demonstrable research achievement within the department.

## **12. Program Advisory Committee Role**

1. Assess the current program and ensure that it's up to date and serving the requirements of industry and following the standard guidelines of relevant professional bodies.
2. Advise about required attributes, skills and suitable outcomes for the passing out students necessary for their success.
3. Help the program / department in assessing the job market requirements and provide suggestion for improvement in the program based on these requirements.
4. Provide advice on the technological trends and changes in industry
5. Provide advice on opportunities to introduce new programs in response to the needs of a specific profession, industry or sector
6. Promote good relationships with local community and businesses, industry and professional associations
7. Periodically (semester wise / yearly) review the outcomes, enrollment data,
8. services and support facilities and progress of the program
9. Provide support and assistance in the development of new programs and its review process.
10. Assist in training and placement of graduates.

## **PART 2 - PROGRAM QUALITY ASSURANCE SYSTEM**

### **A. Bi-annual Quality Assurance Auditing**

#### **a. Programs' Quality Assurance and Academic Accreditation Committee**

Quality Assurance and Academic Accreditation Committee is responsible of performing a regular check on the quality of documents and services provided by the program. This is carried out once in a semester using approved forms by the Vice-deanship of Quality and Skills Development (VDQSD). These forms are used to evaluate the quality of the important documents and reports such as course reports, course specification and annual program report.

#### **b. Quality Assurance Unit in VDQSD**

Quality Assurance Unit (QAU) at Vice-deanship of Quality and Development performs a bi-annual review to make sure that quality of documents and services provided by programs meet the predetermined standards. For this purpose, QAU review the documents, ask for evidence, check programs facilities, and arrange meetings with different beneficiaries to evaluate the quality of documents and services provided by the program.

### **B. Annual Internal Review**

This is the second reviewing process, which is an annual review and more comprehensive than the bi-annual Quality Assurance Auditing. The internal review process is carried out once in a year under supervision of the Vice-Dean of Quality and Development for the main purposes of assessing and evaluating the quality of services offered by academic programs in the College of Applied Medical Sciences (CAMS). In addition, the review checks also the readiness of programs for academic accreditation. The review team members of internal review process include the Vice-Dean of Quality and Skill Development, the Coordinator of Academic Accreditation Unit, the Coordinator of Measurement and Evaluation Unit, and Coordinator of Quality Assurance Unit. The internal review process is a comprehensive and focused review of all quality documents, and all services provide by the programs. Detailed review reports are prepared with suggestions and recommendations to the concerned programs. These feedbacks are used by program coordinators in development plans to improve the services provided by their programs.

### **Procedures**

#### **A. Assessment & Evaluation**

**Purpose:** To provide program, committees with analysis for further recommendations, writing action plans and for improvement issues.

**The quality cycle is:**

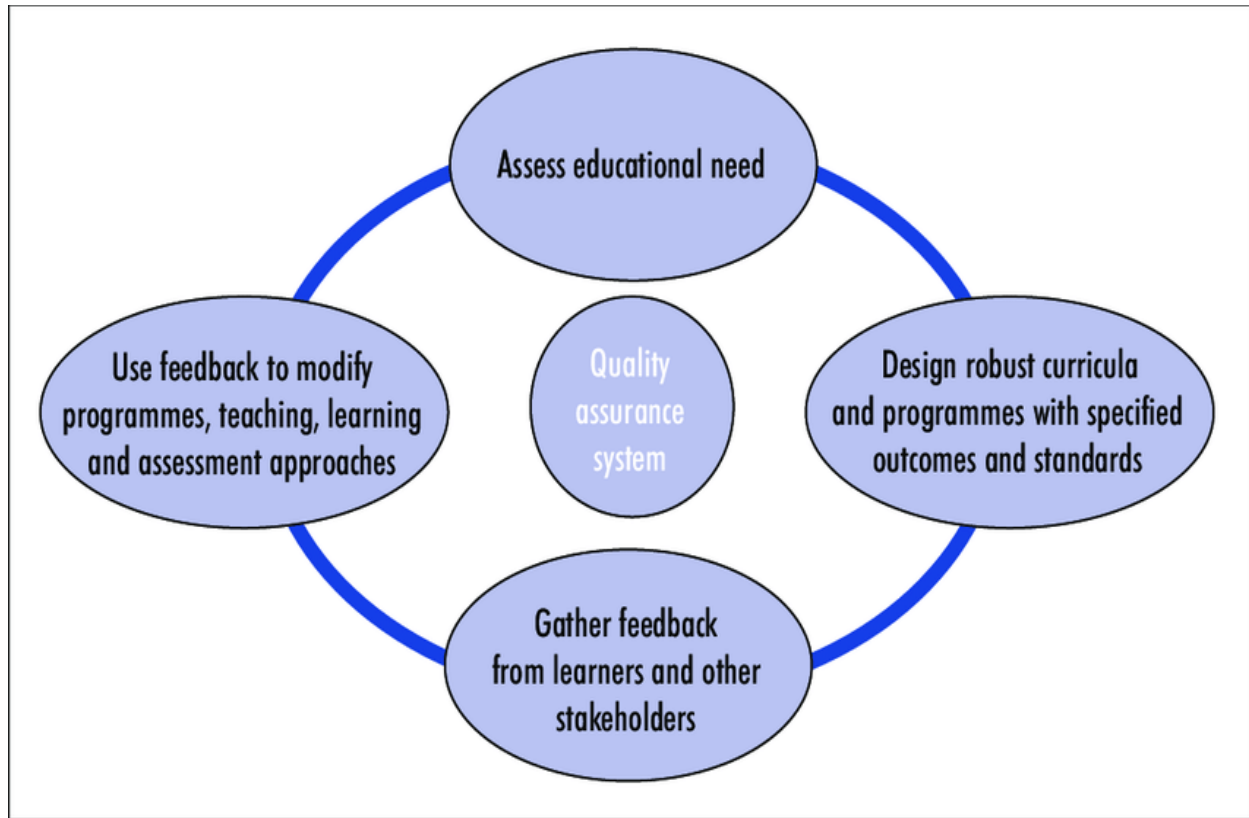


Figure 3. General Quality cycle followed in the Department

## Program Plan to achieve the Mission & Objectives



Figure 4. Programs' Plan to achieve the Mission & Objectives



**Program means to achieve the goals**



Figure 5. Program means to achieve the goals

## Ensuring the adequacy of Learning processes & Resources

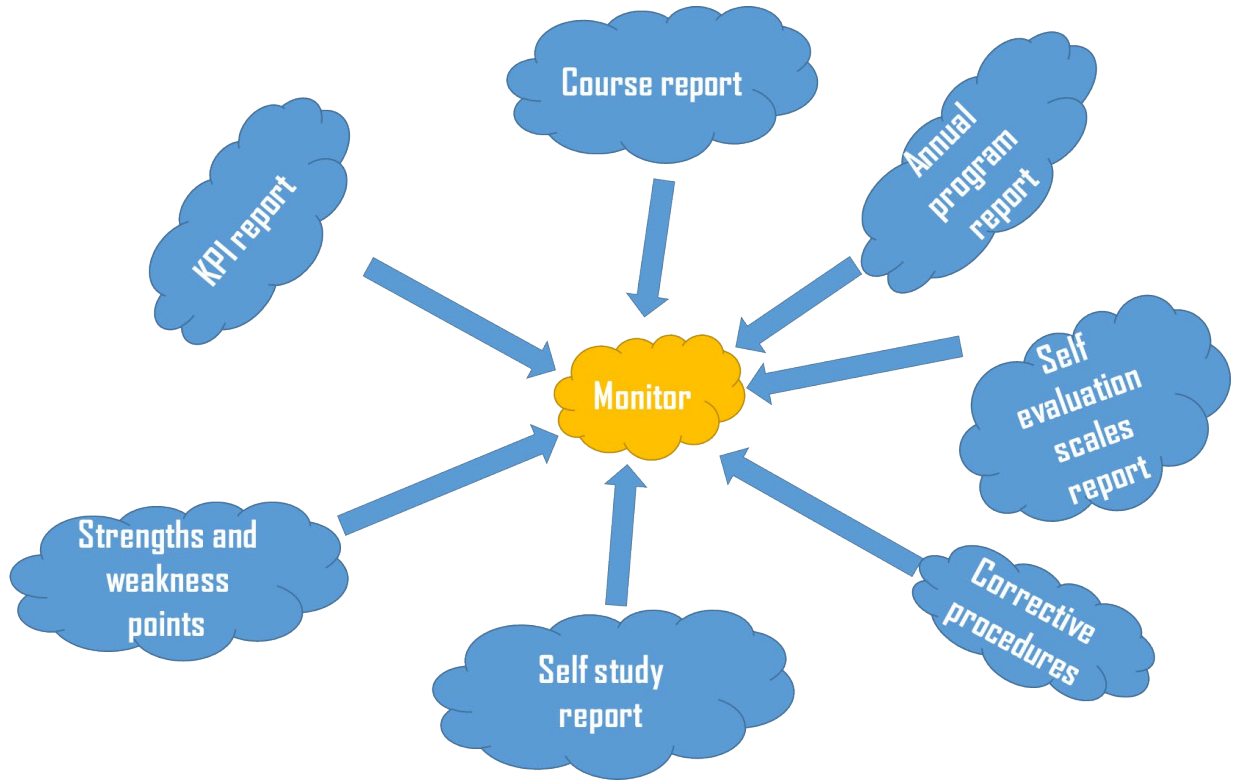


Figure 6. Process involved in ensuring the adequacy of learning processes & resources

## Program KPIs

KPI No.	KPI	KPI Analysis methods and frequencies		
		Data Source	Frequency	Committees Responsible
KPI-PG-1	<b>Percentage of achieved indicators of the program operational plan objectives:</b> Percentage of performance indicators of the operational plan objectives of the program that have achieved the targeted annual level to the total number of indicators targeted for these objectives in the same year.	Data	Annual	Quality & Academic Accreditation Committee
MU-P-01	<b>Average rating of beneficiaries' satisfaction with the community services</b> provided by the program on a five-level scale in an annual survey	Survey	Annual	Alumni & Community Services Committee
KPI-PG-2	<b>Students' Evaluation of quality of learning experience in the program:</b> Average of overall rating of final year students for the quality of learning experience in the program on a five point scale in an annual survey.	Survey	Annual	Academic Affairs Committee
KPI-PG-3	<b>Students' evaluation of the quality of the courses:</b> Average students' overall rating of the quality of courses on a five- point scale in an annual survey.	Survey	Semester wise	Academic Affairs Committee
KPI-PG-4	<b>Students' evaluation of the quality of scientific supervision:</b> Average students' overall rating of the quality of scientific supervision on a five-point scale in an annual survey.	Survey	Annual	Scientific Research & Innovations Committee
KPI-PG-5	<b>Average time for students' graduation:</b> Average time (in semesters) spent by students to graduate from the program.	Data	Annual	Student Affairs Committee
KPI-PG-6	<b>Rate of students dropping out of the program:</b> Percentage of students who did not complete the program to the total number of students in the same cohort.	Data	Annual	Student Affairs Committee
KPI-PG-7	<b>Graduates' employability:</b> Percentage of graduates from the program who within a year of graduation were employed to the total number of graduates in the same year.	Data	Annual	Human Resources and Post Graduate Education Committee

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<b>KPI-PG-8</b>	<b>Employers' evaluation of the program graduates' competency:</b> Average of overall rating of employers for the competency of the program graduates on a five point scale in an annual survey.	Survey	Annual	Human Resources and Post Graduate Education Committee
<b>KPI-PG-9</b>	<b>Students' satisfaction with the provided services:</b> Average of students' satisfaction rate with the various services provided by the program (food, transportation, sport facilities, academic advising, ...) on a five-point scale in an annual survey.	Survey	Annual	Student Affairs Committee
<b>MU-P2</b>	The <b>percentage of students who received a warning</b> or more in the program to the total number of students in the program.	Data	Annual	Student Affairs Committee
<b>MU-P3</b>	The <b>percentage of students who were denied entry to the final examination</b> of the course for exceeding the legally permitted percentage of the total number of students in the program.	Data	Annual	Student Affairs Committee
<b>MU-P4</b>	<b>Students' publications in conferences:</b> The number of student papers that have been published or presented in scientific conferences during the past year.	Data	Annual	Scientific Research & Innovations Committee
<b>KPI-PG-10</b>	<b>Ratio of students to faculty members:</b> Ratio of the total number of students to the total number of full-time and fulltime equivalent faculty members participating in the program.	Data	Annual	Quality & Academic Accreditation Committee
<b>KPI-PG-11</b>	<b>Percentage of faculty members' distribution based on academic ranking:</b> Percentage distribution of faculty members participating in the program based on academic ranking.	Data	Annual	Human Resources and Post Graduate Education Committee
	<b>Professor</b>			
	<b>Associate Professor</b>			
	<b>Assistant Professor</b>			
<b>KPI-PG-12</b>	<b>Proportion of faculty members leaving the program:</b> Proportion of faculty members leaving the program annually for reasons other than age retirement to the total number of faculty members.	Data	Annual	Human Resources and Post Graduate Education Committee
<b>KPI-PG-13</b>	<b>Satisfaction of beneficiaries with learning resources:</b> Average of beneficiaries' satisfaction rate with learning resources on a five-point scale in an annual survey in terms of: a. Their adequacy and diversity (references, journals, databases... etc.) b. The	Survey	Annual	Labs & Equipment Committee

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	support services provided for their utilization.			
<b>KPI-PG-14</b>	<b>Satisfaction of beneficiaries with research facilities and equipment:</b> Average of beneficiaries' satisfaction rate with research facilities and equipment (depending on the nature of the program) on a five-point scale in an annual survey.	Survey	Annual	Labs & Equipment Committee
<b>KPI-PG-15</b>	<b>Percentage of publications of faculty members:</b> Percentage of faculty members participating in the program with at least one research publication during the year to total faculty members in the program.	Data	Annual	Scientific Research & Innovations Committee
<b>KPI-PG-16</b>	<b>Rate of published research per faculty member:</b> The average number of refereed and/or published research per each 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)	Data	Annual	Scientific Research & Innovations Committee
<b>KPI-PG-17</b>	<b>Citations rate in refereed journals per faculty member:</b> 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)	Data	Annual	Scientific Research & Innovations Committee
<b>KPI-PG-18</b>	<b>Percentage of students' publication:</b> Percentage of students who: a. published their research in refereed journals b. presented papers in conferences to the total number of students in the program during the year.	Data	Annual	Scientific Research & Innovations Committee
<b>KPI-PG-19</b>	<b>Number of patents, innovative products, and awards of excellence:</b> Number of: a. Patents and innovative products b. National and international excellence awards obtained annually by the students and staff of the program.	Data	Annual	Scientific Research & Innovations Committee
<b>MU-P-05</b>	The percentage of full-time faculty members who provided professional development activities inside or outside the university during the year to the total teaching staff in the program	Data	Annual	Quality & Academic Accreditation Committee

## **Program Evaluation Process**

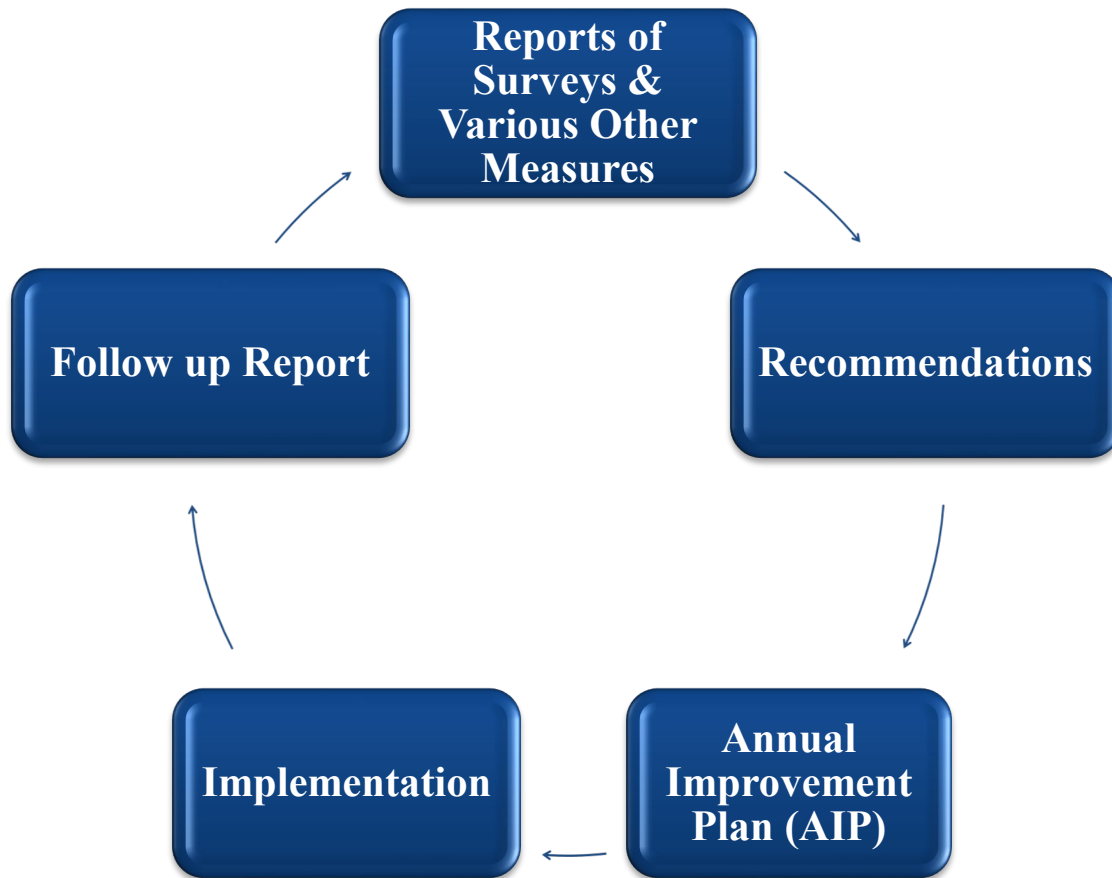


Figure 7. Program Evaluation Process

## **Systematic Cycle of Evaluation**

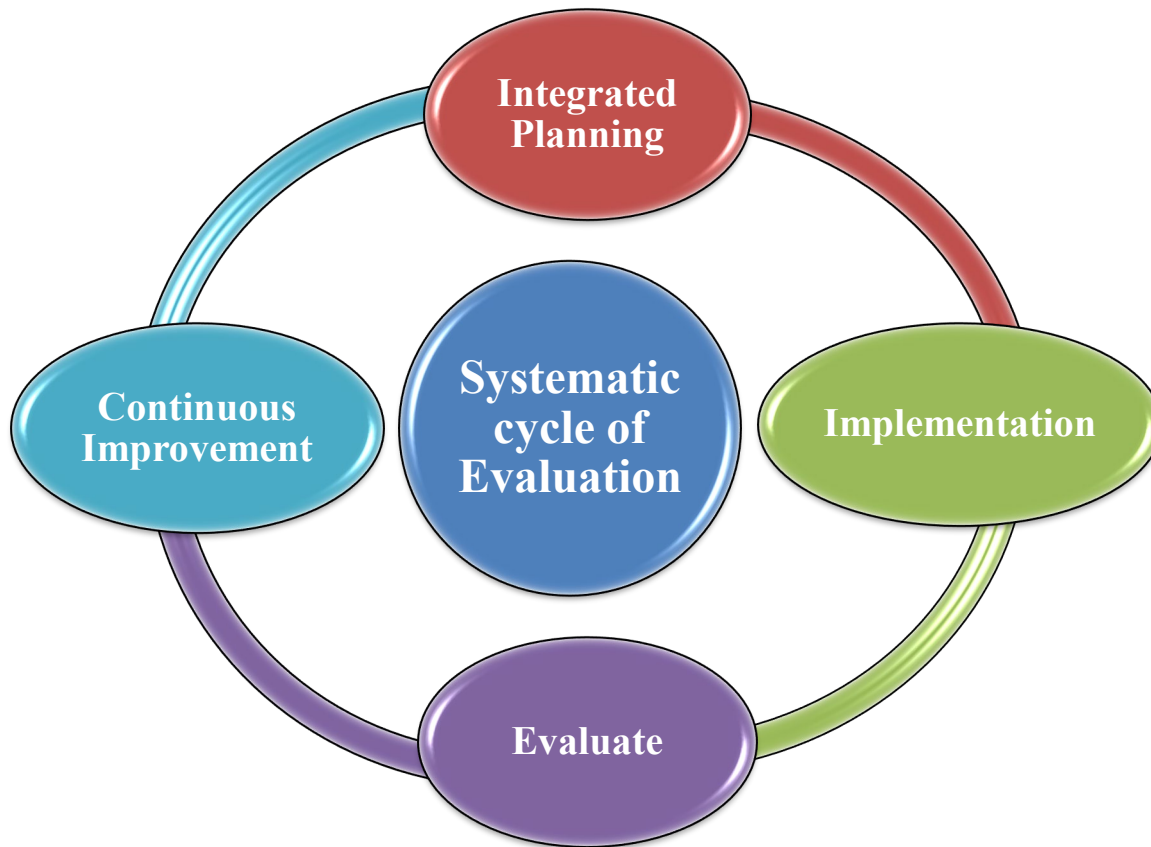


Figure 8. Programs' Systematic Cycle of Evaluation

## Process of Closing the Loop

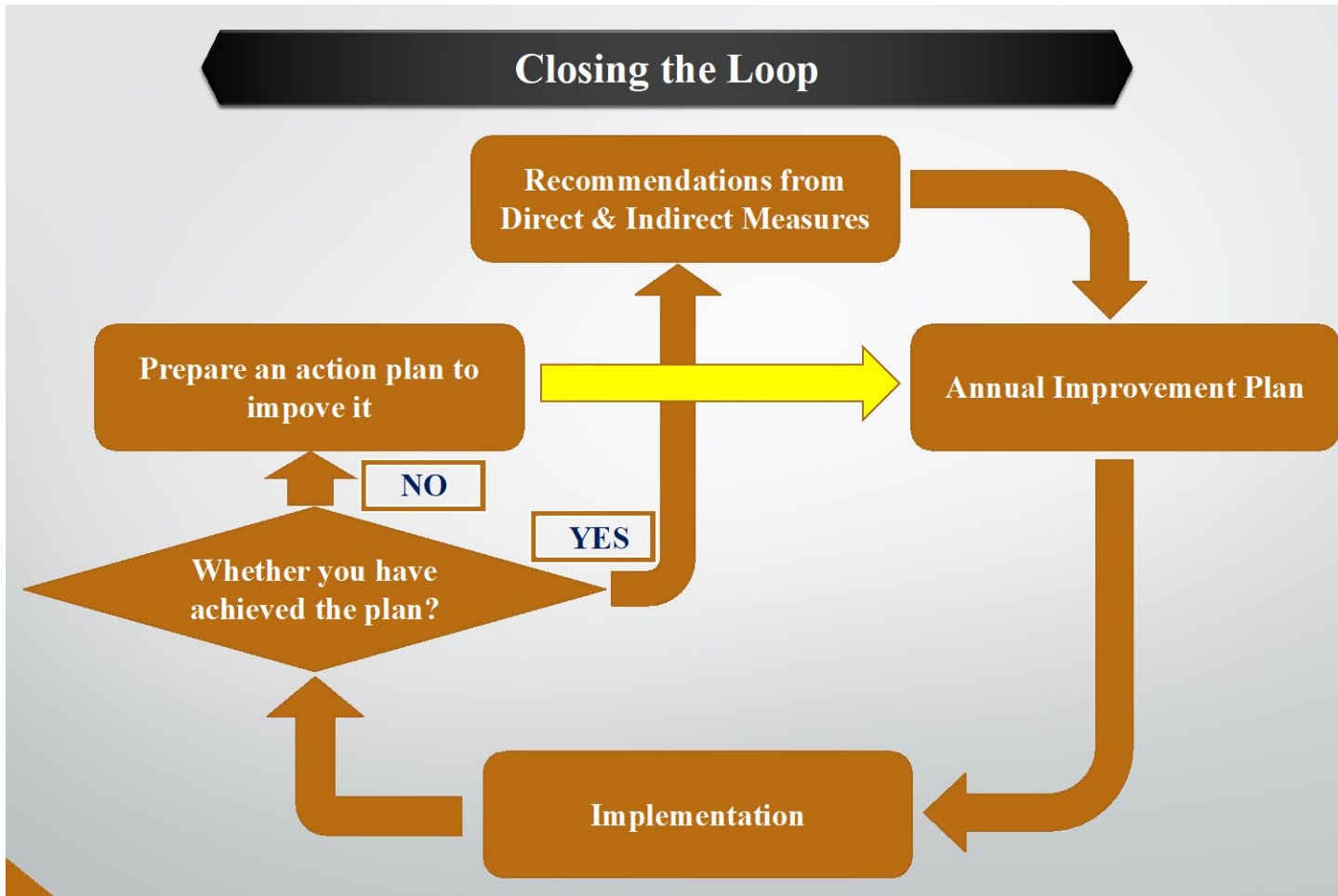


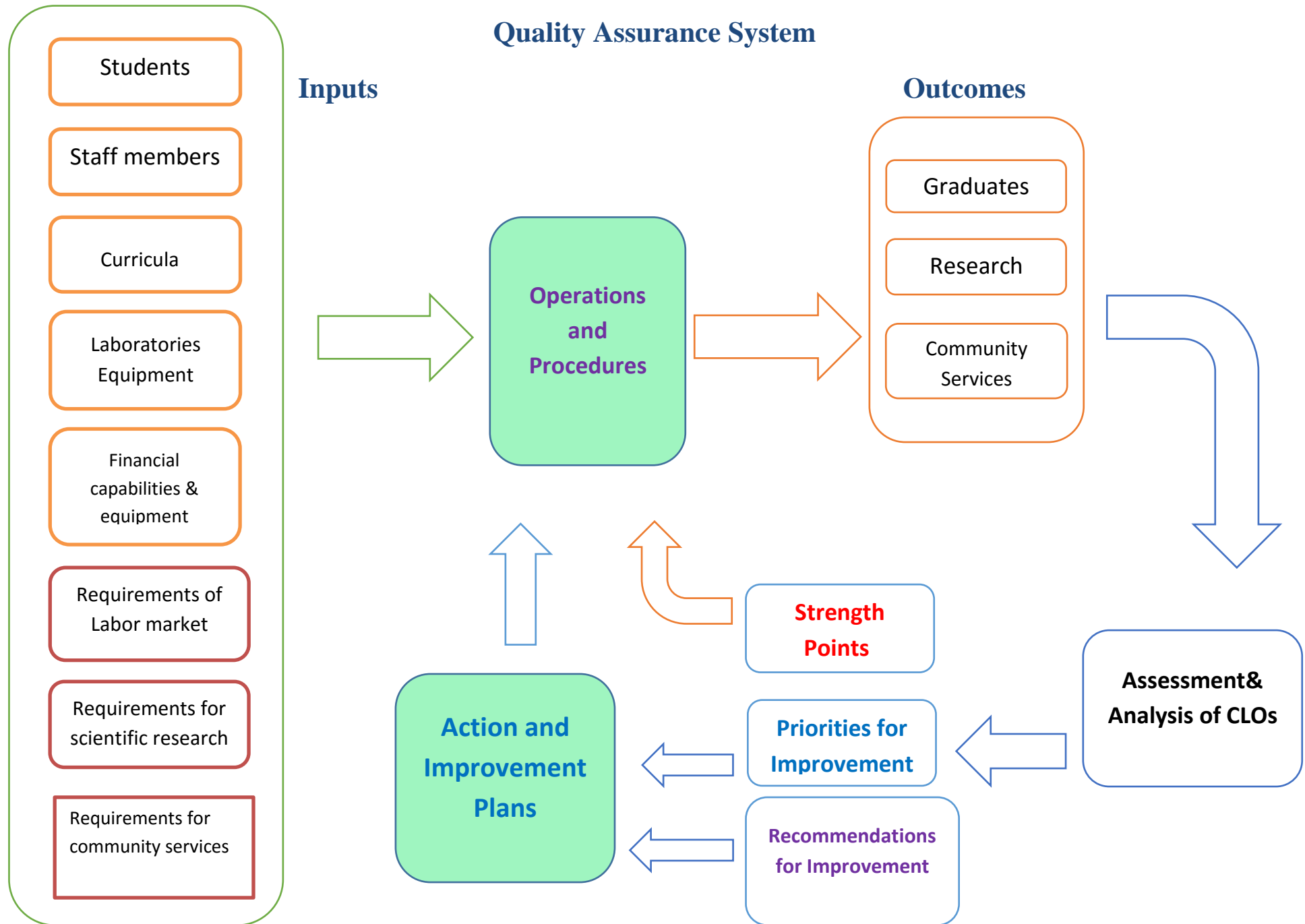
Figure 9. Programs' Process of Closing the Loop

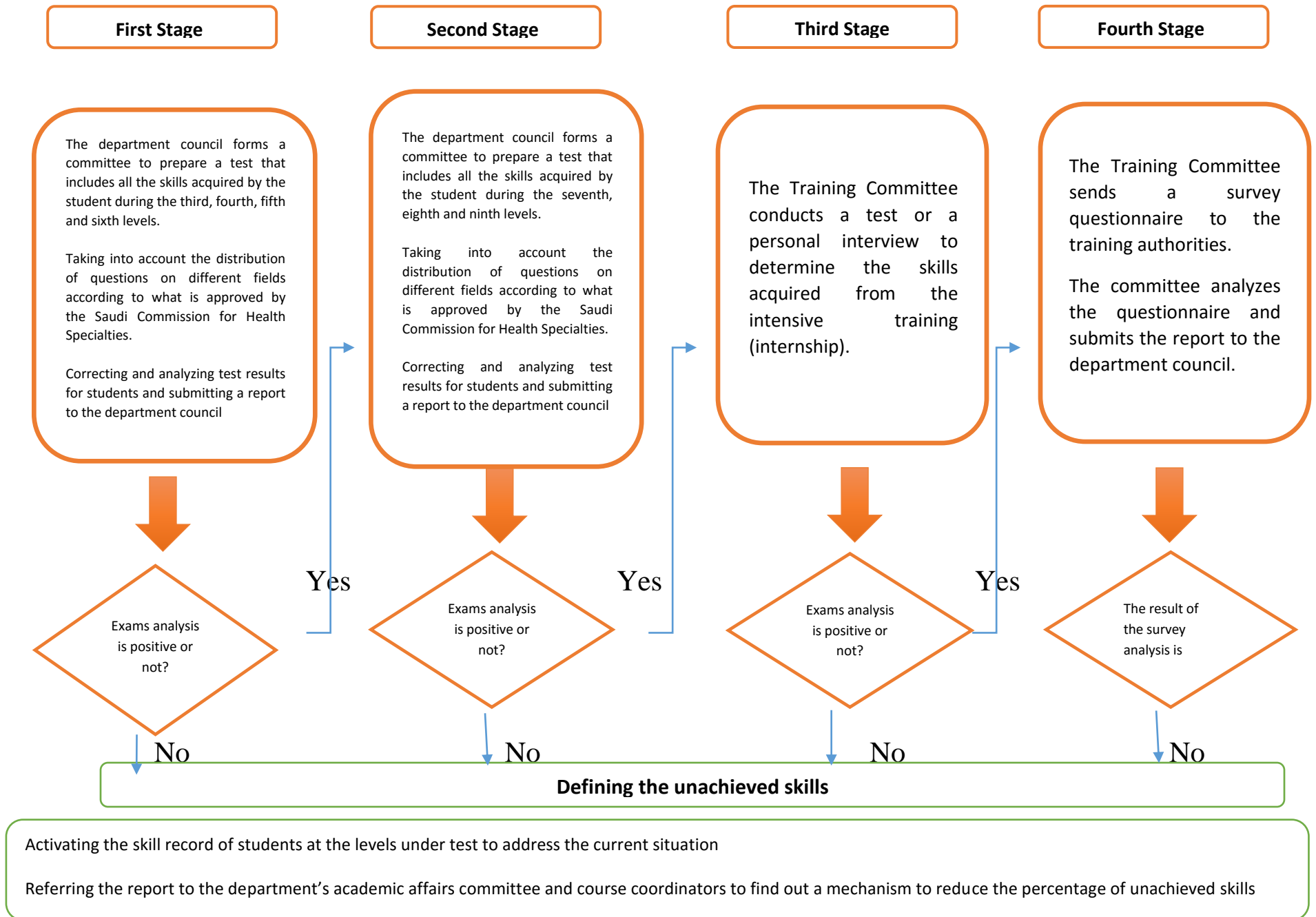


## Mapping Matrix of the Indirect Measures

S. No	Methods of Assessment	Mapping Matrix based on desired level of performance. (I=Introduced, P=Practiced, M=Mastered)
1	<b>Student Experience Survey (SES)</b>	<b>I</b>
2	<b>Course Evaluation Survey (CES)</b>	<b>I</b>
3	<b>Academic Advising Survey (AAS)</b>	<b>I</b>
4	<b>Survey on Community Services (SCS)</b>	<b>I</b>
5	<b>Program Evaluation Survey (PES)</b>	<b>P</b>
6	<b>Scientific Supervision Survey (SSS)</b>	<b>P</b>
7	<b>Faculty Satisfaction Survey (FSS)</b>	<b>P</b>
8	<b>Advisory Committee feedback</b>	<b>P</b>
9	<b>Student overall GPA</b>	<b>P</b>
10	<b>Quality Assurance Audits</b>	<b>P</b>
11	<b>Graduate / Alumni Survey (AS)</b>	<b>M</b>
12	<b>Graduate Stakeholder's Survey (GSS)</b>	<b>M</b>
13	<b>Vision Mission Survey (VMS)</b>	<b>M</b>
14	<b>External reviews (NCAAA &amp; ABET)</b>	<b>M</b>

# Quality Assurance System





## Quality of Faculty Inputs & Evaluation:

The faculty member and those in charge are the focus of the educational process, and the faculty member evaluation guide aims to motivate faculty members to continuously improve through developing academic courses, teaching and learning methods, increasing scientific production, attending conferences and scientific seminars, participating in committees and non-academic activities inside and outside the department.

In view of the complexity of the evaluation process for the faculty member, an equation was built to calculate the efficiency of the faculty members. The evaluation process is carried out on a quarterly basis, provided that it is compiled at the end of the academic year.

<b>Evaluation factor</b>	<b>relative weight</b>	<b>Evaluation Officer</b>
Curriculum development	%20	Academic Affairs Committee
Develop teaching and learning methods	%10	Academic Affairs Committee
Students' evaluation of the faculty member	%10	Student Affairs Committee
Scientific production	%10	Scientific Research Committee
Attending conferences, seminars and training courses	%10	Training Committee
Participation in committees and non-academic activities inside and outside the department	%30	The chairperson of the committee or the representative of the college
The opinion of the head of the department	%10	Head of Department

## Quality assessment of faculty inputs:

Procedure	Timing	Responsibility	Follow up	Attachments
Preparing the course description	The first week of each semester	Faculty Member - Course Coordinators	Quality and Academic Accreditation Committee	Discussing and approving the description in the first department board meeting
Announcing course descriptions for students	The first week of each semester	faculty member	Academic Affairs Committee	Questionnaire to evaluate the course, the part about the beginning of the course
Poll students' opinions about courses	The eighth week of each semester	Academic Affairs Committee	Academic Affairs Committee	Questionnaire evaluating the course, the part of what happened during the course
Preparation of theoretical and laboratory tests	The eighth, twelfth, fifteenth, and sixteenth weeks	faculty member	The department's examination committee	A report on the extent to which the tests are committed to measuring educational outcomes and the instructions for the assessment and measurement limit in the college
Preparing the course report	After completing the final exams	faculty member	Quality and Academic Accreditation Committee	Discussing and approving the decisions report in the penultimate department council
Determining the required numbers of faculty members in the department	End of the year	HR Committee	Head of Department	The report is submitted to the department council for discussion and approval, and then to the college council

## **Curricula:**

### **First: Curriculum Development:**

The process of developing academic courses is carried out in line with the developments of practical research and the requirements of the labor market and the extent to which they are used in community service

The percentage of development is calculated from the total courses taught by a faculty member

### **Second: Developing teaching and learning methods:**

The process of developing teaching and learning methods is carried out in line with the requirements of the National Authority for Academic Accreditation and modern teaching and learning methods.

The percentage of development is calculated from the total courses

### **Third: Students' evaluation of the faculty member:**

Students are requested to evaluate the performance of faculty member using forms approved by the university

The average assessment percentage is calculated from the total number of courses taught

### **Fourth: Academic production of a faculty member:**

The academic production of a faculty member is calculated at the end of each academic year

- The evaluation percentage is determined based on the percentage of what has been published out of the total publication for the department.

**Fifth: Attending conferences, seminars and training courses:**

The faculty member's participation in conferences, seminars and training courses inside and outside the college is limited by the department's training committee.

The evaluation percentage is calculated based on the department's total attendance.

**Sixth: Participation in committees and non-academic activities inside and outside the college:**

The faculty member's participation in committees and non-academic activities inside and outside the college is limited by the department's Academic Affairs Committee.

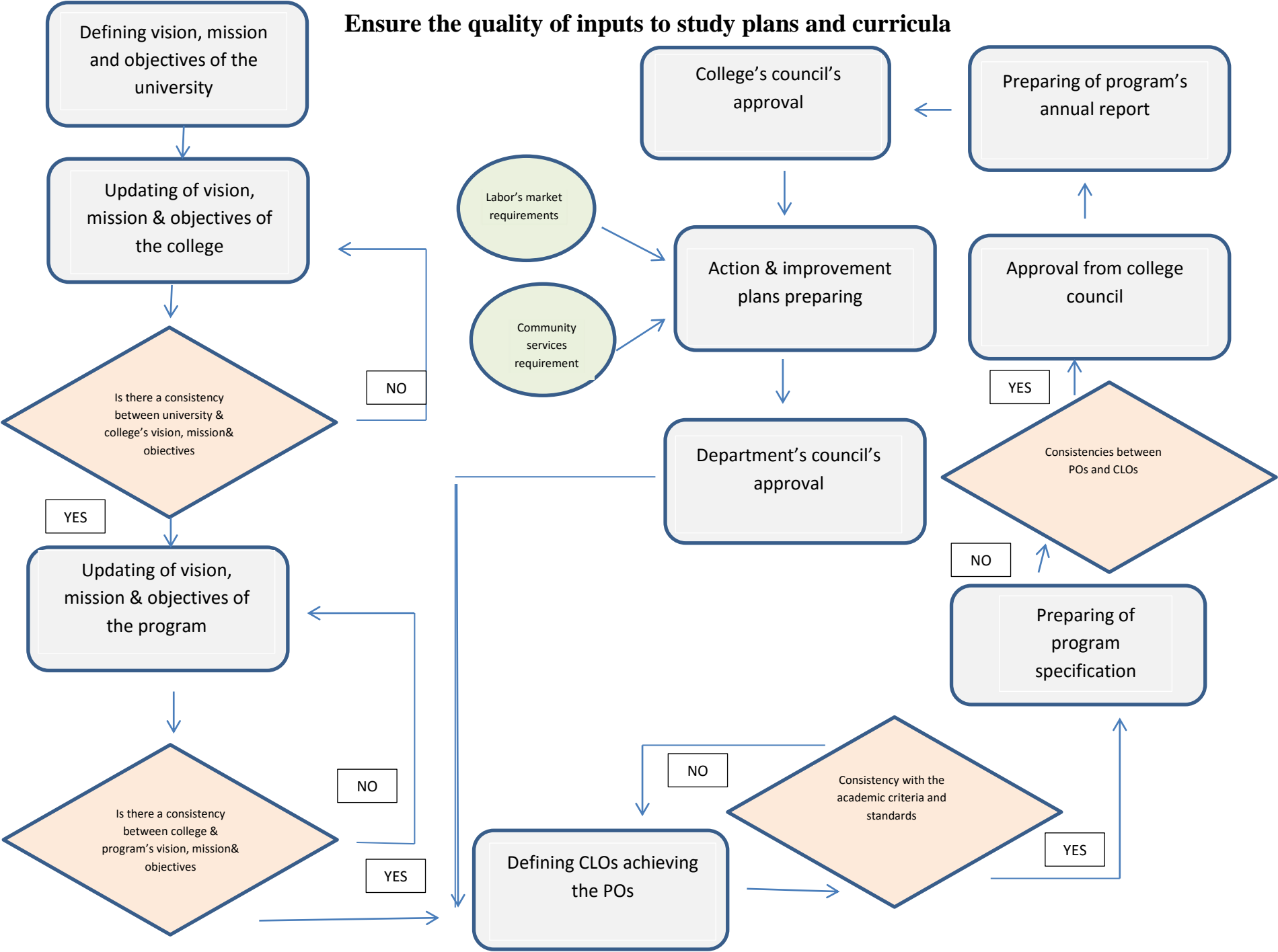
The evaluation percentage is calculated based on the department's total participation rate.

**Seventh: The opinion of the head of the department:**

A faculty member is evaluated based on the following:

- o The extent of responding to what tasks are asked of him
- o The quality of the tasks performed
- o Commitment to the dates and times of lectures and laboratories
- o Commitment to outward appearance.

**Ensure the quality of inputs to study plans and curricula**

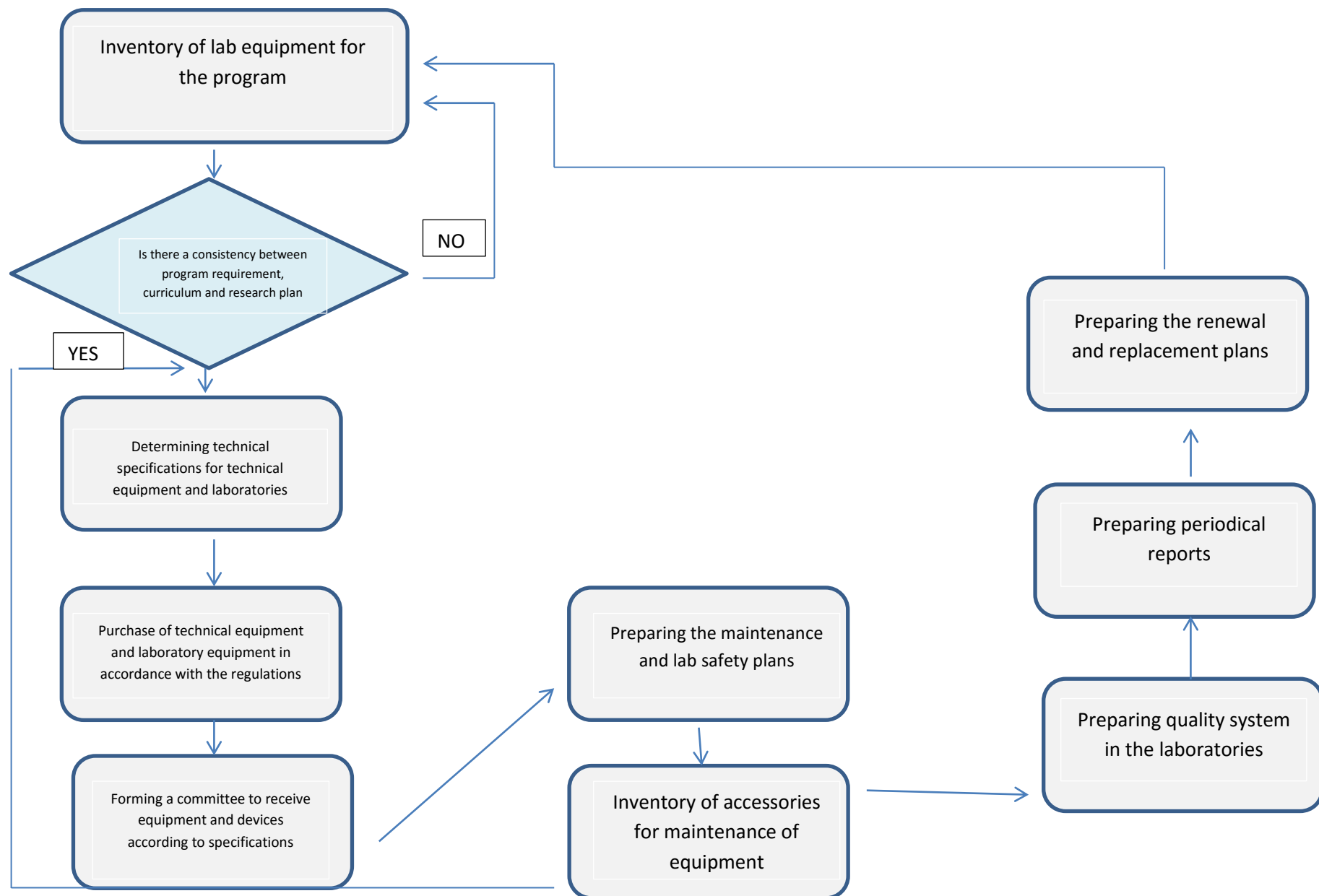




## Input quality, study plans and curricula:

Procedure	Timing	Responsibility	Follow up	Attachments
Reviewing the course descriptions and matching what was recommended in the course reports for the previous semester	The second week of each semester	Study plan development committee	Quality and Academic Accreditation Committee	Discussing and approving the description at a department board meeting
Compilation of recommendations in course reports	After completing the final exams	Study plan development committee	Quality and Academic Accreditation Committee	Discussing and adopting recommendations in a department board meeting
Labor market opinion poll on the current study plan	The first week of each semester	Study plan development committee	Quality and Academic Accreditation Committee	Discussing and approving the results of the opinion poll in a department board meeting
Determining the requirements of the labor market and the requirements of community service	During the first and second semester	Study plan development committee	Quality and Academic Accreditation Committee	Discuss and approve the requirements in line with the possibilities available at the department board meeting
Develop a plan to develop the study plan	Fourth week of the first semester	Study plan development committee	Academic Affairs Committee and Quality and Academic Accreditation Committee	Discuss and approve the plan at a department board meeting

## Insurance of the quality of inputs, technical equipment and laboratories

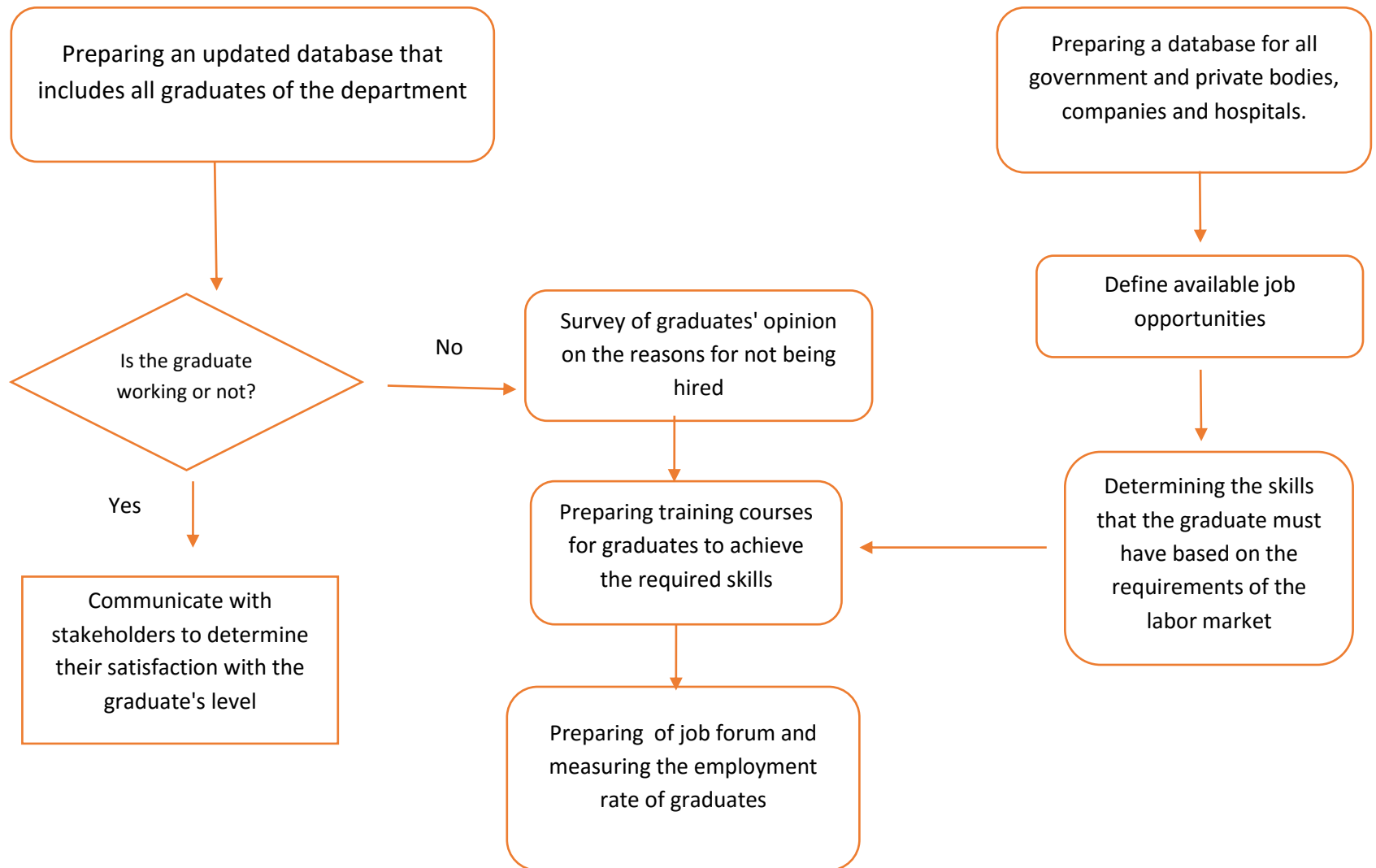


## **Reference feeding procedures from technical equipment and laboratories**

- 1- Availability of laboratory equipment
- 2- The extent to which safety and security standards are applied in laboratories
- 3- The extent of utilization of laboratory equipment in scientific research

<b>Procedure</b>	<b>Timing</b>	<b>Responsibility</b>	<b>Follow up</b>	<b>Attachments</b>
Inventory of all practical experiences in the courses and link them with the available practical equipment	During the first semester	Laboratories and Equipment Committee	Academic Affairs Committee	Preparing a plan for replacement and renewal approved by the department council
Inventory of all spare parts and supplies required	The second week of the first semester	Laboratories and Equipment Committee	Academic Affairs Committee	Preparing a purchase requisition approved by the head of the department
Preparing a plan for periodic maintenance of laboratory equipment	The second week of the first semester	Laboratories and Equipment Committee	Laboratories and Equipment Committee	Approval of the plan by the department council
Report on the periodic maintenance plan	Fifteenth week of each semester	Laboratories and Equipment Committee	Laboratories and Equipment Committee	Discussing and approving the report by the department council
Forming a committee to set technical specifications for the devices to be purchased	Fourteenth week of the second semester	Head of Department	Head of Department	Depends on the department board

## Second: ensuring the quality of the outcomes for graduates



<b>Procedure</b>	<b>Timing</b>	<b>Responsibility</b>	<b>Follow up</b>	<b>Attachments</b>
Creating a database of alumni	Fifth week of the first semester	Alumni Committee	Alumni Committee	Preparing a report to be discussed in the department council
Graduates' satisfaction survey	Sixth week of the first semester	Alumni Committee	Alumni Committee	Preparing a report to be discussed in the department council
Survey of graduates' opinion on the reasons for not being hired	Sixth week of the first semester	Alumni Committee	Alumni Committee	Preparing a report to be discussed in the department council
Set up a database for employers (stakeholders)	Fifth week of the first semester	Alumni Committee	Alumni Committee	Preparing a report to be discussed in the department council
Determining job opportunities and determining the skills to be available in the graduate	The tenth week of the first semester	Alumni Committee	Training Committee	Preparing a report to be discussed in the department council
Preparing a training plan in agreement with the Deanship of Community Service to qualify graduates for available job opportunities	The tenth week of the first semester	Alumni Committee	Training Committee	Approval of the plan by the department council
Recruitment Forum	Sixteenth week of the second semester	Alumni Committee	Training Committee	Preparing a report to be discussed in the department council

## Insurance of the quality of the outcomes of scientific research and community service

Procedure	Timing	Responsibility	Follow up	Attachments
Defining the research areas for faculty members in the department	The second week of the first semester	Scientific Research Committee	Academic Affairs Committee	Submit a report to be discussed in the department council
Inventory of all bodies supporting scientific research within the Kingdom	The third week of the first semester	Scientific Research Committee	Scientific Research Committee	Preparing awareness-raising workshops for faculty members in the department
An inventory of all research centers inside and outside the Kingdom and achieving communication with them	The third week of the first semester	Scientific Research Committee	community service committee	Submit a report to be discussed in the department council
Preparing a research plan for the department	Fourth week of the first semester	Scientific Research Committee	community service committee	Discussing and approving the plan in the department council