University of Tabuk

Faculty of Engineering

Mechanical Engineering Department

Bachelor of Science in Mechanical Engineering

Quality Assurance Manual

Developed By: Academic Accreditation & Development And Quality Committee

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1. Introduction

Purpose of the Manual

This Quality Assurance Manual outlines the framework and processes that support continuous improvement and uphold high standards in the B.Sc. Program of the Mechanical Engineering Department. It serves to:

- Define quality assurance principles and practices specific to the program.
- Establish procedures for curriculum development, delivery, assessment, and review.
- Foster a culture of continuous improvement and accountability among faculty, staff, and students.
- Ensure alignment with institutional objectives, accreditation requirements, and industry standards.
- Provide a reference for faculty, students, administrative staff, and external stakeholders.

By adhering to this manual, the Mechanical Engineering Department strives to deliver a high-quality education that equips students with the knowledge, skills, and competencies essential for their professional careers.

Scope and Applicability

This Quality Assurance Manual applies to all aspects of the B.Sc. Program in Mechanical Engineering, covering:

- **Program Governance and Administration**: Faculty and staff roles, decision-making processes, and communication protocols.
- **Curriculum Design and Delivery**: Course development, approval processes, teaching methods, and alignment with learning outcomes.
- **Student Admission and Support**: Admission policies, academic advising, student services, and support systems.
- **Faculty and Staff Development**: Recruitment, training, performance evaluation, and workload management.
- **Facilities and Resources**: Availability, maintenance, and enhancement of laboratories, libraries, IT infrastructure, and other learning resources.
- **Assessment and Evaluation**: Methods for measuring student performance, program outcomes, and overall effectiveness.
- **Quality Assurance and Continuous Improvement**: Internal and external review processes, feedback mechanisms, and strategies for ongoing enhancement.
- **Compliance and Accreditation**: Adherence to institutional policies, national regulations, and accreditation standards.

This manual serves as a reference for faculty, staff, and students of the B.Sc. Mechanical Engineering Department, as well as external stakeholders, including industry partners and accrediting bodies.

Abbreviations:

Bachelor of Science (BSc)
Mechanical Engineering (ME)
Mechanical Engineering Program (MEP)
Bachelor of Science in Mechanical Engineering Program (BSc MEP)
University of Tabuk (UT)
Faculty of Engineering (FoE)
Head of the Department (HoD)
National Qualifications Framework (NQF)
Accreditation Board for Engineering & Technology (ABET)
Education & Training Evaluation Commission (ETEC)
National Centre for Academic Accreditation and Evaluation (NCAAA)
Program Goals (PG)
Operational Plan (OP)
Key Performance Indicators (KPIs)
Program Specifications (PS)
Annual Program Report (APR)
Course Specifications (CS)
Program Learning Outcomes (PLOs)
Student Outcomes (SOs)
Self-Study Report (SSR)
Self-Study Report for Program (SSRP)
Action Plan for Improvement (API)
Program Development Plan (PDP)
Quality Assurance (QA)
Not Available / Not Applicable (NA)
Assessment and Evaluation Committees (AEC)

2. Overview of the BSc program in ME

In this section, we provide a comprehensive introduction to the BSc ME program.

2.1 Visions of the University, Faculty, Department

University of Tabuk Vision

A university that is educationally and academically distinguished which cooperated in community service.

Faculty of Engineering Vision

A distinguished and pioneering college, locally and internationally, in the field of engineering education, innovative research, and building a knowledge society.

Department of Mechanical Engineering (BSc MEP) Vision

A distinguished and pioneering ME department locally and internationally in the field of Mechanical engineering education, innovative research, and building a knowledge society.

Alignment of the Visions

The following table gives the alignment of the visions by mapping the keywords of the University of Tabuk with the Faculty of Engineering and the Mechanical Engineering Department represented specifically in the (BSc MEP).

Table 1 Alignment of the Visions

Keywords	University of Tabuk	Faculty of Engineering	BSc MEP
Institution	A **university** that is **educationally** and academically **distinguished** which is cooperated in **community** service	A **distinguished** and pioneering **college** locally and internationally in the field of **engineering education**, innovative **research**, and building a knowledge **society**	A **distinguished** and pioneering ME department locally and internationally in the field of Mechanical engineering **education**, innovative research, and building a knowledge **society**.
Distinguished			
Education			
Community			
Research			

2.2 Mission of the University, Faculty, and BSc MEP

University of Tabuk Mission

To offer a distinguished university education that meets the needs of society and the job market through an attractive educational, administrative, and technical environment that supports research and innovation.

Faculty of Engineering Mission

To graduate qualified engineers in accordance with the International Academic Standards and prepare them to meet the changing needs of society. These graduates will be able to compete locally and internationally. The Faculty of Engineering is committed to providing excellent education and pursuing relevant scientific research and partnership with industry and governmental societies.

B.Sc. in Mechanical Engineering Program (BSc MEP) Mission

To graduate qualified Mechanical engineers in accordance with the International Academic Standards and prepare them to meet the changing needs of society. These graduates will be able to compete locally and internationally. The Mechanical Engineering Department is committed to providing excellent education and pursuing relevant scientific research and partnership with industry and governmental societies.

Alignment of the Missions

The following table gives the alignment of the missions by mapping the keywords of the University of Tabuk with the Faculty of Engineering and BSc MEP.

Table 2 Alignment of the Missions

Keywords	University of Tabuk	Faculty of Engineering	BSc MEP
Needs of society	To offer a distinguished university education that meets the **needs of society** and the job market through an **attractive educational**, administrative, and technical environment that supports **research** and innovation.	To graduate qualified engineers in accordance with the International Academic Standards and prepare them to meet the changing **needs of society**. These graduates will be able to compete locally and internationally. The Faculty of Engineering is committed to providing **excellent education** and pursuing relevant scientific **research** and partnership with industry and governmental societies.	To graduate qualified Mechanical engineers in accordance with the International Academic Standards and prepare them to meet the changing needs of society. These graduates will be able to compete locally and internationally. The Mechanical Engineering Department is committed to providing **excellent education** and pursuing relevant scientific **research** and partnership with industry and governmental societies.
Excellent education			
Research			

2.3 Goals of the University, College, and Program

University Goals

UG1: To provide a distinguished university education that meets the needs of the labor market.

UG2: To support innovative research to contribute to building a knowledge economy.

UG3: To promote social responsibility and community partnership.

UG4: Sustainability of infrastructure and technology for an attractive educational environment.

UG5: Effective governance and management.

UG6: Diversify innovative financing sources and achieve expenditure efficiency.

Faculty of Engineering Goals

CG1: To deliver distinguished academic education that meets the needs of the labor market.

CG2: Providing creative research to contribute to building the knowledge economy of society.

CG3: Effective contribution to sustainable development and community service.

CG4: Offer a stimulating and attractive learning environment.

CG5: Develop an effective administrative and organizational environment in the college.

CG6: Providing innovative financing sources.

BSc ME Program Goals

PG1: To deliver distinguished academic education that meets the needs of the labor market.

- This goal is the core of the educational mission of the ME program, which is to provide students with a set of knowledge, skills, and expertise required to become competent mechanical engineers. The ultimate mission of this goal is to prepare the graduates with a solid foundation in mechanical engineering principles, problem-solving abilities, and technical proficiency.

PG2: Providing creative research to contribute to building the knowledge economy.

- This goal focuses on the importance of contributing to the knowledge economy through creative research. The BSc MEP curriculum incorporates research-focused courses, particularly in the latter years, encouraging students to explore and engage in innovative projects.

PG3: Effective contribution to sustainable development and community service.

- This goal emphasizes the importance of effective contribution to sustainable development and community service by integration of courses that societal and environmental impact of mechanical engineering. In addition, the practical training components of the curriculum provide opportunities for students to engage with the community, applying their skills to real-world projects that contribute to sustainable development.

PG4: Offer a stimulating and attractive educational environment.

- This goal focuses on engaging the students through a variety of teaching methods, including theoretical courses, practical labs, and hands-on projects. Additionally, allowing students to pursue areas of personal interest and passion by offering elective courses during the final year of the program.

PG5: Provide efficient operational management and a supportive academic environment.

- This goal focuses on creating and maintaining professional and efficient management practices in the ME department that foster a conducive academic environment for faculty and students. The smooth management of the department will ensure that faculty and students are focused only on their primary responsibilities without having to worry about inefficient administrative problems.

Mapping the goals and the mission of BSc MEP

The goals of the BSc MEP are formulated based on its mission, and the alignment between the program goals and the mission is outlined in the table below.

Table 3: Mapping the goal and the mission of MEP

Program Goals	Program mission Keywords	Alignment with program mission
PG1: To deliver distinguished academic education that meets the needs of the labor market.	• **Excellent education**	Directly supports the mission's focus on graduating qualified mechanical engineers well-prepared for the job market for the job market through distinguished academic education.
PG2: Providing creative research to contribute to building the knowledge economy.	• **Research**	Emphasis on the mission's commitment to scientific research, innovation, and knowledge economy development.
PG3: Effective contribution to sustainable development and community service.	• **Excellent education** • **Needs of society**	Aligns with the mission by preparing engineers to address societal needs through sustainability and community engagement.
PG4: Offer a stimulating and attractive educational environment.	• **Excellent education**	Indirectly aligns with the mission by fostering an engaging learning environment that enhances student development.
PG5: Provide efficient operational management and a supportive academic environment	• **Excellent education** • **Research** • **Needs of society**	Supports the mission by enhancing the program's efficiency for the operations related to the program.

Alignment of Goals

The following table shows the alignment of the goals of the University of Tabuk with those of the Faculty of Engineering and BSc MEP.

Table 4: Alignment of Goals

BSc MEP Goals	Faculty of Engineering Goals						University of Tabuk Goals					
	CG1	CG2	CG3	CG4	CG5	CG6	UG1	UG2	UG3	UG4	UG5	UG6
PG1	✓						✓					
PG2		✓				✓		✓				✓
PG3			✓	✓					✓			
PG4				✓						✓		
PG5					✓						✓	

2.4 Program Learning Outcomes of the BSc MEP.

The Program Learning Outcomes of the BSc MEP are clearly presented in the latest form required by the NCAAA, titled "Consistency with Specialized Academic Standards." as well as in the program specifications.

Table 5 Program Learning Outcomes

Code	Program Learning Outcomes (PLOs)
K	Knowledge and understanding
K1	An ability to demonstrate knowledge of concepts of mechanical engineering and science.
S	Skills
S1	An ability to identify, formulate, and solve complex engineering problems by applying principles of mechanical engineering, science, and mathematics.
S2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
S3	An ability to communicate effectively with a range of audiences.
S4	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
V	Values, Autonomy, and Responsibility
V1	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
V2	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
V3	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

3. Governance and Administration

Strong governance and administration are essential for maintaining the quality and cohesion of the Mechanical Engineering Department at the University of Tabuk. This section defines the organizational structure, roles and responsibilities, committees, boards, and communication and reporting systems that support the program's mission and objectives.

3.1 Organizational Structure

The organizational structure of the Mechanical Engineering Department is designed to ensure efficient management, decision-making, and communication. It defines hierarchical relationships, reporting lines, and the distribution of responsibilities among faculty, administrative staff, and support personnel. Figure 1 illustrates the department's organizational structure.

This structure aligns with the mission, vision, and strategic goals of the University of Tabuk, supporting the department in achieving its objectives. The key considerations in its design include:

- Alignment with the university's mission and strategic goals
- Compliance with institutional policies
- Adherence to accreditation and quality assurance standards
- Support for the department's mission
- Enhancement of intended learning outcomes
- Responsiveness to stakeholder needs
- Clear roles, responsibilities, and accountability
- Flexibility to adapt to evolving requirements

The development of the department's organizational structure followed a systematic approach. It began with identifying key components and defining outcomes aligned with institutional and industry standards. Faculty numbers and qualifications were evaluated to maintain a balanced expertise mix. Input from internal and external stakeholders, including faculty, industry partners, and students, ensured alignment with academic and professional expectations.

Essential support services, such as academic advising, career services, and research support, were incorporated to enhance student success. Committees and councils were established with defined roles and responsibilities to facilitate effective decision-making. Clear reporting relationships and hierarchical structures were implemented to ensure efficient communication and accountability across the department.

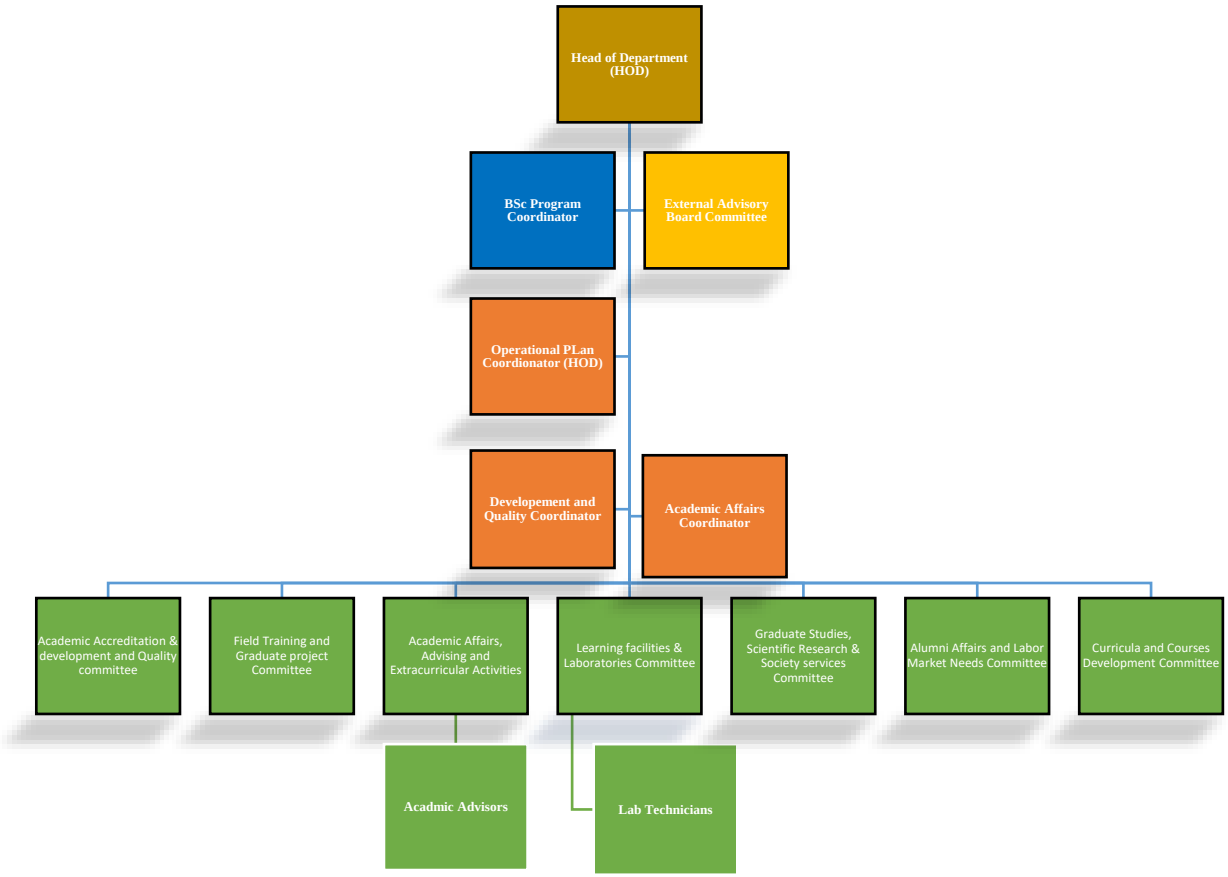

Figure 1: Organizational Structure of the ME Department

3.2 Roles and Responsibilities of the Programs Department Personnel

Head of the Department (HOD)

The Head of the Department (HOD) is a faculty member recognized for scientific and administrative competence, appointed by the University President upon the Dean's nomination. The HOD's responsibilities include:

- Distributing academic workloads among faculty members.
- Appointing a course coordinator for courses with multiple sections taught by different faculty members.
- Approving grades.
- Assigning a cross-checker to verify the accuracy and consistency of final exam assessments.
- Preparing faculty performance reports.
- Encouraging department employees to attend training programs within and outside the university.

- Overseeing the educational process, implementing study plans, and supporting curriculum development.
- Promoting academic and research growth within the program.
- Ensuring compliance with quality assurance and accreditation requirements.
- Representing the department in meetings and activities within and outside the university, as authorized.
- Coordinating partnerships with relevant internal and external entities, as authorized.
- Reporting to the Dean on departmental progress, scientific or behavioral violations, and breaches of professional duties, while ensuring the implementation of directives.
- Preparing an annual report on academic progress, research, and administrative performance for submission to the Dean.
- Performing additional tasks assigned by the Dean within the HOD's authority.

Faculty Members

Faculty members in the Mechanical Engineering Department play a vital role in education, research, and service. Their responsibilities include:

- Developing and delivering course materials, including lectures, labs, assignments, and exams, in accordance with program policies and regulations.
- Supervising student projects, theses, and dissertations, providing mentorship and guidance.
- Preparing course documentation, such as Course Specifications and Course Reports, following program guidelines.
- Assessing student learning outcomes and evaluating program effectiveness.
- Incorporating feedback from assessments to enhance teaching practices and course content.
- Contributing to a supportive academic environment and fostering a positive organizational climate.
- Serving on departmental, college, and university committees, participating in governance and decision-making.
- Engaging in departmental meetings and activities to promote collaboration.
- Conducting original research and publishing findings in peer-reviewed journals and conferences.
- Seeking external funding through grant proposals and research collaborations.
- Pursuing continuous professional development to stay updated with advancements in the field.
- Participating in outreach activities to promote the program and inspire future engineers.
- Providing academic advising to support students in their educational and career development.
- Mentoring students to enhance their professional growth and readiness for the industry.

Program Coordinator

The Program Coordinator is responsible for:

- Overseeing the daily operations of the program
- Ensuring the smooth delivery of courses and related activities.
- Collaborate with faculty, staff, and students to maintain program standards.
- Monitor academic progress, and coordinate resources.
- Assists in curriculum development, manages scheduling, and ensures alignment with accreditation requirements and institutional goals.
- Serve as a liaison between the program and external stakeholders, including industry partners and accrediting bodies.

Academic Affairs Coordinator

The Academic Affairs Coordinator is a faculty member appointed by the Head of the Department (HoD) to manage the preparation, implementation, and monitoring of academic schedules and related activities. In consultation with the HoD, the coordinator's responsibilities include:

- Developing and managing comprehensive schedules for the program, ensuring alignment between faculty availability, classroom resources, and course requirements.
- Overseeing the creation and distribution of detailed course schedules, including timings, room assignments, and faculty assignments for all program courses.
- Monitoring and updating schedules throughout the registration process to quickly address and resolve any conflicts or registration issues.
- Designing and coordinating exam schedules, ensuring no conflicts, and providing students with clear, conflict-free timetables.
- Assisting students with course registration and resolving any issues encountered during the process.

Operational Plan Coordinator

The Operational Plan Coordinator, who serves as the Head of the Department (HoD), is responsible for overseeing and managing the execution of the department's strategic initiatives. This role focuses on coordinating activities, fostering effective communication, and ensuring that all efforts align with the department's objectives and accreditation requirements. Key responsibilities of the coordinator include:

- Acting as the central point of contact for all operational plan-related activities.
- Leading the development and ongoing refinement of the B.Sc. MEP operational plan to ensure alignment with program goals.
- Collaborating with the operational plan committee to identify key initiatives and develop KPIs to track progress.
- Facilitating regular meetings with the operational plan committee to review progress and address challenges.
- Ensuring effective communication and collaboration between the operational plan committee and other stakeholders.

- Overseeing the implementation of initiatives and monitoring their progress against KPIs and milestones.
- Identifying and resolving issues that may hinder the successful execution of initiatives.
- Preparing and presenting regular progress reports on the operational plan to leadership and stakeholders.
- Maintaining thorough documentation of all initiatives, including objectives, KPIs, timelines, and outcomes.
- Conducting periodic evaluations of the operational plan to assess its effectiveness and provide data-driven recommendations for improvement.

Development and Quality Coordinator

The Development and Quality Coordinator is responsible for:

- Overseeing the continuous improvement of academic programs and ensuring adherence to quality standards.
- Work closely with faculty and staff to implement best practices, monitor program effectiveness, and support accreditation processes.
- Facilitates the development of new initiatives, ensures compliance with institutional and accreditation requirements.
- Coordinates feedback mechanisms to drive program enhancement.

Course Coordinator

The Course Coordinator is a faculty member appointed by the Head of the Department (HoD) to oversee courses with multiple sections taught by different instructors. Although this situation is rare in the B.Sc. Mechanical Engineering Program (MEP), the Course Coordinator's responsibilities largely mirror those of a course instructor. Their duties include:

- Preparing the course specifications.
- Assisting new faculty members in preparing the course binder.
- Monitoring the progress of the educational process and ensuring faculty adherence to teaching strategies and course evaluation practices.
- Compiling a combined report for all sections of the course.
- Organizing and leading meetings with instructors to address course-related issues, particularly those concerning quality assurance management.

Academic Advisor

Nearly all faculty members are assigned to advise students on academic matters. In addition to supporting the Academic Affairs, Advising, and Extracurricular Activities Committee, the academic advisor's responsibilities include:

- Offering guidance on course selection.
- Assisting with academic planning.
- Monitoring students' academic progress.

- Providing resources and support.
- Addressing academic issues and concerns.
- Offering career advice.
- Encouraging personal growth and development.
- Managing documentation and reporting.
- Providing mentorship.

Lab Technician

The Lab Technician supports the Mechanical Engineering Department by maintaining and managing laboratory equipment, ensuring safe and effective use of lab facilities. Their responsibilities include:

- Setting up and preparing laboratory experiments and equipment for courses.
- Ensuring the proper maintenance and calibration of lab equipment.
- Assisting faculty and students with the setup and operation of lab experiments.
- Monitoring laboratory safety protocols and ensuring compliance with safety regulations.
- Managing inventory of lab supplies and ordering materials as needed.
- Providing technical support during lab sessions and assisting with troubleshooting.
- Ensuring proper disposal of hazardous materials in accordance with regulations.
- Maintaining accurate records of equipment usage, repairs, and inventory.

3.3 Department Committees and their responsibilities

In this section, we present all department committees, their roles and responsibilities, and their alignment with NCAAA standards and criteria.

Committees Alignment with Program Goals and NCAAA Standards

Error! Reference source not found. provides a comprehensive overview of the various committees within the Mechanical Engineering department, detailing their meeting schedules. The table aligns each committee's activities with the relevant program goals and the National Commission for Academic Accreditation and Assessment (NCAAA) standards and criteria.

Table 6: Committees Alignment with Program Goals and NCAAA Standards

SN	Committee	Related Program Goal	Related NCAAA standards and criteria	Meeting Timeline	Expected Outcomes/ Documents	Notes
1.	Department Council	Supervise all Program Goals	Supervise All standards	Once a month Week 1, 3, 7, 11, 15	MoM	Meets in the first week to announce and communicate important information and also convenes after committee meetings to discuss their reports.
2.	Academic Accreditation & Development and Quality Committee	Supervise all Program Goals	Supervise All standards	Once a month Week 3,7,11, 15	MoM, Action or Improvement Plan	
3.	Graduate Studies, Scientific Research & Society Services Committee	PG2 PG3	1-1-7, 1-1-8, 2-3-2, 2-3-4, 4-0-1, 4-0-2, 4-0-3, 4-0-4, and 4-0-5.	Once a month or upon request by the chairman	MoM, Plan, Summary of activities report	
4.	Academic Affairs, Advising, and Extracurricular Activities Committee	PG1 PG4	1-1-5, 1-1-6, 1-1-9, 2-1-1, 2-3-3, 2-3-6, 3-0-1, 3-0-2, 3-0-3 3-0-4, 3-0-5, Cooperate with the Academic Accreditation & Development and quality committee in 3-0-7	Once a month Week 3,7,11, 15 Use other time slots for meeting with students	MoM, Plan, Summary of activities report	The committee can seek information from academic advisors. The Academic Accreditation & Development and Quality Committee conducts the necessary surveys, analyzes the data, and cooperates with the Academic Affairs, Advising, and Extracurricular Activities Committee in preparing necessary actions. The Academic Affairs, Advising, and Extracurricular Activities Committee follows up on the actions, their implementation, and their impact.

SN	Committee	Related Program Goal	Related NCAAA standards and criteria	Meeting Timeline	Expected Outcomes/ Documents	Notes
5.	Learning Facilities & Laboratories Committee	PG4 PG5	Standard 5 (5-0-1 through 5-0-5)	Once a month Week 3,7,11, 15	MoM, Plan, Summary of activities report	The Academic Accreditation & Development and Quality Committee conducts the necessary surveys, analyzes the data, and cooperates with the Learning Facilities & Laboratories Committee in preparing necessary actions. The Learning Facilities & Laboratories Committee follows up on the actions, their implementation, and their impact.
6.	Field Training and Graduate Project Committee	PG1 PG3	2-2-6	Whenever necessary	Annual report about verifies the effectiveness of field training and action plan for improvement of Field Training	
7.	Alumni Affairs and Labor Market Needs Committee	PG1 PG3	1-1-6, 3-0-6	Once a month or upon request by the chairman	Statistical data on ME alumni and their employability	
8.	Curricula and Courses Development Committee	PG1 PG4	2-1-2, 2-1-3, 2-2-1, 2-2-2. 2-2-3, 2-2-5, 2-2-7, and 2-3-5.	Once a month Week 3,7,11, 15	MoM, Plan, Summary of activities report Forms related to curriculum update	

In what follows, we present the detailed responsibilities and roles of each committee. These responsibilities are derived from alignment with NCAAA standards and departmental requirements and are informed by previous experience. This approach ensures that each committee's activities make a meaningful contribution to departmental objectives and align with accreditation criteria effectively.

Academic Accreditation & Development and Quality Committee

Goal	The Academic Accreditation & Development and Quality Committee for the Mechanical Engineering Program (MEP) plays a crucial role in maintaining and enhancing the academic standards and quality of the program. The committee is responsible for overseeing the accreditation process, ensuring continuous development, and implementing quality assurance measures.
Related Program Goal	**Supervise all Program Goals.**

Responsibilities	1. **Learning Outcome Assessment:**
	• **Define Learning Outcomes:**
	  • Develop and periodically review the Program Learning Outcomes (PLOs) to ensure they align with industry standards, stakeholder expectations, and educational best practices.
	• **Assessment Methods:**
	  • Design and implement appropriate assessment tools and methods to evaluate the achievement of PLOs. This includes exams, projects, lab work, and other performance-based assessments.
	• **Data Collection and Analysis:**
	  • Collect data on student performance related to PLOs through various assessments. Analyze this data to identify trends, strengths, and areas for improvement.
	• **Feedback Mechanism:**
	  • Establish a feedback loop involving faculty, students, and industry stakeholders to continuously refine the assessment methods and PLOs.
	2. **Planning:**
	• **Planning:**
	  • Develop a plan for the Mechanical Engineering Program that outlines long-term goals, objectives, and initiatives. This plan should align with the university's mission and vision.
	• **Curriculum Development:**
	  • Regularly review and update the curriculum to incorporate emerging trends, technologies, and industry needs. Ensure the curriculum meets accreditation standards and provides a comprehensive educational experience.
	• **Resource Allocation:**
	  • Plan and allocate resources, including faculty, facilities, and technology, to support the strategic goals of the program.

	Ensure adequate resources are available for effective teaching and learning.
	3. **Annual Program Report:**
	• **Report Preparation:**
	  • Compile an annual program report that documents the activities, achievements, and challenges of the Mechanical Engineering Program. The report should include data on student performance, faculty activities, research outputs, and community engagement.
	• **Performance Evaluation:**
	  • Evaluate the program's performance against predefined goals and benchmarks. Highlight areas of success and identify areas needing improvement.
	• **Stakeholder Communication:**
	  • Share the annual program report with key stakeholders, including faculty, students, industry partners, and accreditation bodies. Use the report to demonstrate accountability and transparency.
	4. **Questionnaires and Statistical Analysis:**
	• **Survey Design and Distribution:**
	  • Design and distribute questionnaires to gather feedback from students, faculty, alumni, and industry partners. Surveys should cover various aspects of the program, including curriculum, teaching quality, facilities, and overall satisfaction.
	• **Data Collection and Management:**
	  • Collect and manage survey responses in a systematic manner. Ensure data integrity and confidentiality throughout the process.
	• **Statistical Analysis:**
	  • Perform statistical analysis on the collected data to derive meaningful insights. Use techniques such as descriptive statistics, inferential statistics, and trend analysis to interpret the results.
	• **Reporting and Action Plans:**
	  • Prepare reports based on the survey analysis. Develop action plans to address identified issues and enhance the program quality based on the feedback received.

Authorities	1. **Policy Formulation:** • The committee has the authority to formulate policies related to accreditation, quality assurance, and program development. These policies must align with university guidelines and accreditation standards. 2. **Decision Making:** • The committee is empowered to make decisions regarding the implementation of new assessment methods, curriculum changes, and quality improvement initiatives. These decisions are subject to approval by higher academic authorities, if required. 3. **Resource Allocation:**

	• The committee can recommend the allocation of resources, including budget, faculty appointments, and facility upgrades, to support the strategic goals of the program. 4. **Accreditation Liaison:** • Serve as the primary liaison with accreditation bodies. Ensure compliance with accreditation requirements and coordinate the submission of necessary documentation and reports. 5. **Oversight and Monitoring:** • Monitor the implementation of action plans and initiatives related to accreditation, development, and quality assurance. Ensure continuous improvement through regular reviews and assessments. 6. **Stakeholder Engagement:** • Engage with various stakeholders, including faculty, students, alumni, and industry partners, to gather input and feedback. Ensure stakeholder perspectives are considered in decision-making processes. The Academic Accreditation & Development and Quality Committee plays a pivotal role in ensuring that the Mechanical Engineering Program maintains high academic standards, achieves continuous improvement, and meets the expectations of accreditation bodies and stakeholders. Through systematic planning, assessment, and stakeholder engagement, the committee ensures the program's relevance, quality, and excellence.

Graduate Studies, Scientific Research & Society Services Committee

Goal	The Graduate Studies, Scientific Research & Society Services Committee for the Mechanical Engineering Program (MEP) plays a crucial role in advancing graduate education, fostering innovative research, and promoting community engagement. This committee is tasked with ensuring that graduate students receive a high-quality education, supporting faculty and student research initiatives, and facilitating meaningful interactions with the broader community.
Related Program Goal	**PG2: Providing creative research to contribute to building the knowledge economy.** **PG3: Effective contribution to sustainable development and community service.**
Responsibilities	1. **Graduate Studies Management:** • **Curriculum Development:** • Review and update the graduate program curriculum to ensure it meets current academic and industry standards. Incorporate feedback from faculty, students, and industry partners to keep the curriculum relevant and rigorous. • **Graduate Student Admissions:** • Oversee the admissions process for graduate students, including setting admission criteria, reviewing applications, and selecting candidates. Ensure a fair and transparent process that attracts high-quality students. • **Academic Advising:** • Provide academic advising and support for graduate students. This includes helping students plan their course schedules, select research topics, and navigate academic requirements.

2. **Scientific Research Promotion:**

- **Research Funding:**
  - Identify and secure funding opportunities for faculty and student research projects. Assist in the preparation of grant proposals and manage the allocation of research funds.
- **Research Collaboration:**
  - Foster collaboration between faculty, students, and external partners to enhance research outcomes. Promote interdisciplinary research initiatives and partnerships with industry and other academic institutions.
- **Research Dissemination:**
  - Facilitate the dissemination of research findings through publications, conferences, and workshops. Support faculty and students in publishing their research in high-impact journals and presenting at major conferences.

3. **Society Services and Community Engagement:**

- **Outreach Programs:**
  - Develop and implement outreach programs that leverage the expertise of the MEP to benefit the community. This includes workshops, seminars, and public lectures on topics related to mechanical engineering.
- **Community Projects:**
  - Engage students and faculty in community service projects that address local needs and challenges. Encourage the application of engineering knowledge to solve real-world problems in the community.
- **Industry Engagement:**
  - Establish and maintain relationships with industry partners to enhance the practical relevance of the program. Collaborate with industry on projects, internships, and other initiatives that provide mutual benefits.

4. **Graduate Student Support:**

- **Mentorship Programs:**
  - Establish mentorship programs that connect graduate students with faculty mentors. Provide guidance on academic and career development, research practices, and professional growth.
- **Professional Development:**
  - Organize workshops and seminars on skills such as grant writing, research methodologies, and presentation techniques. Help students develop the competencies needed for successful careers in academia and industry.
- **Thesis and Dissertation Support:**
  - Provide support for the thesis and dissertation process, including proposal development, research design, and defense preparation. Ensure that students receive the necessary resources and guidance to complete their projects successfully.

Authorities	1. **Decision-Making:** • The committee has the authority to make decisions regarding the curriculum, policies, and procedures for the graduate program. This includes approving changes to courses, admission criteria, and program requirements. 2. **Budget Management:** • The committee is authorized to develop and manage the budget for graduate studies and research activities. This includes allocating funds for student scholarships, research projects, and outreach programs. 3. **Policy Development:** • The committee can develop policies related to graduate education, research practices, and community engagement. These policies must ensure compliance with university regulations and promote excellence in all areas. 4. **Research Oversight:** • The committee oversees the research activities within the MEP, ensuring that they align with the program's goals and standards. This includes monitoring research progress, ensuring ethical standards, and managing research outputs.

Academic Affairs, Advising, and Extracurricular Activities Committee

Goal	The Academic Affairs, Advising, and Extracurricular Activities Committee for the Mechanical Engineering Program (MEP) is responsible for overseeing and enhancing the academic performance, advising, and extracurricular engagement of students. The committee plays a critical role in supporting both low-performing and gifted students, ensuring that all students have the resources and opportunities needed to succeed.
Related Program Goal	**PG1: To deliver distinguished academic education that meets the needs of the labor market.** **PG4: Offer a stimulating and attractive educational environment.**

Responsibilities	1. **Supporting Low-Performing Students:**
	• **Identification and Monitoring:**
	  • Regularly review academic performance data to identify students who are struggling or at risk of failing. This includes monitoring grades, attendance, and other relevant indicators.
	• **Academic Advising:**
	  • Provide personalized academic advising to low-performing students. Develop individualized improvement plans that include specific goals, strategies, and timelines for academic recovery.
	• **Tutoring and Remedial Programs:**
	  • Organize tutoring sessions and remedial programs to help students improve their understanding of challenging subjects.

This may involve peer tutoring, faculty-led sessions, or external tutoring services.

- **Workshops and Seminars:**
  - Conduct workshops and seminars on study skills, time management, and exam preparation to help students develop effective learning strategies.
- **Progress Tracking:**
  - Implement a system for tracking the progress of low-performing students. Regularly review their performance and adjust support strategies as needed.

2. **Supporting Gifted Students:**

- **Identification and Recognition:**
  - Identify gifted students through academic performance, faculty recommendations, and other criteria. Recognize their achievements through awards, honors, and public acknowledgment.
- **Advanced Academic Opportunities:**
  - Provide advanced academic opportunities for gifted students, such as honors courses, advanced research projects, and participation in academic competitions.

- **Mentorship Programs:**
  - Establish mentorship programs where gifted students can work closely with faculty members or industry professionals on advanced projects and research.
- **Leadership and Extracurricular Activities:**
  - Encourage gifted students to take on leadership roles in student organizations, clubs, and extracurricular activities. Provide support for their involvement in conferences, workshops, and other enrichment activities.
- **Scholarship and Fellowship Guidance:**
  - Assist gifted students in identifying and applying for scholarships, fellowships, and other academic awards.

3. **Advising and Student Support:**

- **Academic Advising:**
  - Offer comprehensive academic advising services to all students. Assist with course selection, career planning, and navigating academic policies and procedures.
- **Career Counseling:**
  - Provide career counseling services to help students explore career options, prepare for job interviews, and connect with potential employers.
- **Personal Development Workshops:**
  - Organize workshops and seminars on personal development topics, such as communication skills, leadership, and professional ethics.
- **Student Feedback Mechanism:**

- Develop a structured feedback mechanism to gather input from students on their academic and advising experiences. Use this feedback to improve services and support.

4. **Extracurricular Activities:**

- **Clubs and Organizations:**
  - Support the formation and operation of student clubs and organizations related to mechanical engineering. Encourage student participation in these activities to foster a sense of community and engagement.
- **Competitions and Events:**
  - Organize and support student participation in engineering competitions, hackathons, and other events that provide practical experience and enhance learning.
- **Workshops and Seminars:**
  - Conduct workshops and seminars on topics beyond the regular curriculum, such as entrepreneurship, innovation, and emerging technologies.

- **Community Engagement:**
  - Encourage students to participate in community service and outreach activities. Support initiatives that promote social responsibility and community involvement.

5. **Preparation of Academic Lecture and Exam Schedules:**

- **Coordination with Faculty:**
  - Collaborate with faculty members to gather input on course requirements, preferred teaching times, and exam schedules. Ensure alignment with faculty availability and course demands.
- **Scheduling Optimization:**
  - Develop optimized lecture and exam schedules that minimize conflicts and ensure a balanced distribution of classes and exams across the semester. Use scheduling software and tools to improve efficiency and accuracy.
- **Room and Resource Allocation:**
  - Allocate classrooms, laboratories, and other resources based on course requirements and availability. Ensure that the scheduling accommodates the needs of both students and faculty, including accessibility considerations.
- **Conflict Resolution:**
  - Implement a process for addressing scheduling conflicts, such as overlapping classes or exams. Work with faculty and students to resolve issues promptly and fairly.
- **Publication and Communication:**
  - Publish the finalized lecture and exam schedules in a timely manner on the university's academic portal. Ensure clear communication of schedules to students, faculty, and relevant departments.

	• **Schedule Adjustments:**
	  • Establish a protocol for handling schedule adjustments due to unforeseen circumstances, such as instructor availability changes or special events. Ensure any changes are communicated promptly to all stakeholders.
	• **Feedback and Improvement:**
	  • Collect feedback from students and faculty regarding the scheduling process. Use this input to continuously improve the scheduling system and address any recurring issues or challenges.

Authorities	1. **Policy Development:** • The committee has the authority to develop and implement policies related to academic affairs, advising, and extracurricular activities. These policies must align with the overall goals and regulations of the university and the Mechanical Engineering Program. 2. **Resource Allocation:** • The committee can recommend the allocation of resources, including funding, facilities, and personnel, to support academic advising, tutoring, and extracurricular programs. 3. **Program Design and Implementation:** • The committee has the authority to design and implement programs and initiatives aimed at supporting low-performing and gifted students. This includes the creation of new academic support programs, extracurricular activities, and mentorship opportunities. 4. **Evaluation and Assessment:** • The committee is responsible for evaluating the effectiveness of its programs and initiatives. This includes conducting regular assessments, analyzing data, and making necessary adjustments to improve outcomes. 5. **Collaboration with Faculty and Staff:** • The committee can collaborate with faculty, staff, and other university departments to coordinate efforts and ensure comprehensive support for students. This includes working with faculty to identify students in need of support and to provide necessary resources. 6. **Communication and Reporting:** • The committee is responsible for communicating its activities, decisions, and outcomes to relevant stakeholders, including students, faculty, and university administration. This includes preparing

	reports, conducting meetings, and maintaining transparency in its operations. 7. **Authority to Utilize Scheduling Tools and Software:** • The committee is authorized to utilize scheduling software and tools to create efficient lecture and exam schedules. This includes the authority to recommend investments in scheduling technologies and training for staff. 8. **Decision-Making Authority on Schedule Conflicts:** • The committee has the authority to make decisions on resolving scheduling conflicts, including finalizing adjustments to ensure minimal disruption to the academic calendar. 9. **Collaboration with Administrative Units:** • The committee is empowered to work with university administrative units, such as the Registrar's Office, to ensure schedules align with broader university timelines and requirements. By fulfilling these tasks and exercising its authority, the Academic Affairs, Advising, and Extracurricular Activities Committee ensures that the Mechanical Engineering Program provides a supportive and enriching environment for all students, enabling them to achieve their full potential.

Field Training and Graduate Project Committee

Goal	The Field Training and Graduate Project Committee for the Mechanical Engineering Program (MEP) is tasked with overseeing and managing all aspects related to the field training and graduation projects of students.
Related Program Goal	**PG1: To deliver distinguished academic education that meets the needs of the labor market.** **PG3: Effective contribution to sustainable development and community service.**
Responsibilities	1. **Field Training Coordination**: • **Develop Field Training Policies**: Formulate and update policies and guidelines for field training to ensure alignment with academic and industry standards. • **Identify Training Opportunities**: Collaborate with industry partners to identify and secure field training opportunities for students. • **Placement of Students**: Allocate students to suitable training positions based on their academic performance and career interests. • **Training Agreements**: Prepare and oversee agreements between the university and industry partners, outlining the responsibilities and expectations of both parties. • **Supervision and Evaluation**: Assign academic supervisors to monitor and evaluate the progress of students during their training period. Ensure regular reporting and assessment of student performance.

2. **Graduate Project Management**:
    - **Project Proposal Review**: Evaluate and approve project proposals submitted by students, ensuring they meet academic standards and align with industry needs.
    - **Assignment of Supervisors**: Allocate academic supervisors for each graduate project, ensuring that students receive proper guidance and support throughout their project.
    - **Progress Monitoring**: Implement a system for regular monitoring of project progress through periodic reports, presentations, and meetings.
    - **Final Assessment**: Organize and oversee the final assessment of graduate projects, including project presentations, reports, and any required demonstrations or prototypes.
3. **Curriculum Integration**:
    - **Align Training and Projects with Curriculum**: Ensure that field training and graduate projects are integrated into the overall curriculum, complementing theoretical knowledge with practical experience.
    - **Update Curriculum Based on Feedback**: Use feedback from students, supervisors, and industry partners to inform and update the curriculum, ensuring it remains relevant and effective.
4. **Quality Assurance**:
    - **Develop Evaluation Criteria**: Create and maintain a set of evaluation criteria and rubrics for assessing field training and graduate projects.
    - **Collect Feedback**: Gather feedback from students, industry partners, and academic supervisors to continually improve the training and project processes.
    - **Ensure Compliance**: Ensure that all field training and graduate project activities comply with university regulations and accreditation standards.
5. **Reporting and Documentation**:
    - **Maintain Records**: Keep detailed records of all field training and graduate project activities, including agreements, evaluations, and feedback.
    - **Prepare Reports**: Compile and submit regular reports on the status and outcomes of field training and graduate projects to the department and university administration.
6. **Stakeholder Engagement**:
    - **Industry Collaboration**: Foster relationships with industry partners to enhance training opportunities and project collaborations.
    - **Workshops and Seminars**: Organize workshops, seminars, and information sessions for students and faculty to discuss best practices, new technologies, and industry trends relevant to field training and graduate projects.
7. **Student Support**:

	• **Guidance and Counseling**: Provide guidance and counseling services to help students select appropriate training and project opportunities that align with their career goals. • **Problem Resolution**: Address and resolve any issues or challenges faced by students during their training or project periods.
Authorities	1. **Policy Development:** • The committee has the authority to develop and implement policies related to field training and graduation projects. These policies must align with the overall goals and regulations of the university and the Mechanical Engineering Program. 2. **Resource Allocation:** • The committee can recommend the allocation of resources, including funding, facilities, and personnel, to support field training and graduation projects. 3. **Evaluation and Assessment:** • The committee is responsible for evaluating the effectiveness of its programs and initiatives. This includes conducting regular assessments, analyzing data, and making necessary adjustments to improve outcomes. 4. **Communication and Reporting:** • The committee is responsible for communicating its activities, decisions, and outcomes to relevant stakeholders, including students, faculty, and university administration. This includes preparing reports, conducting meetings, and maintaining transparency in its operations.

Learning Facilities & Laboratories Committee

Goal	The Learning Facilities & Laboratories Committee for the Mechanical Engineering Program (MEP) is responsible for ensuring that the educational facilities and laboratories are equipped, maintained, and operated to support high-quality teaching, learning, and research activities. This committee plays a crucial role in enhancing the practical and experimental components of the curriculum.
Related Program Goal	**PG4: Offer a stimulating and attractive educational environment.** **PG5: Provide efficient operational management and a supportive academic environment.**
Responsibilities	1. **Assessment and Planning:** • **Facility and Equipment Assessment:** • Conduct regular assessments of the current state of learning facilities and laboratories, including equipment, tools, and software. Identify areas that require upgrades, maintenance, or new acquisitions.

	• **Needs Analysis:**
	  • Perform a comprehensive needs analysis to determine the specific requirements of faculty and students for effective teaching and research. This includes soliciting feedback from stakeholders and reviewing curriculum needs.
	• **Strategic Planning:**
	  • Develop a strategic plan for the development and improvement of learning facilities and laboratories. This plan should align with the program's educational goals and objectives.
	2. **Equipment Acquisition and Maintenance:**
	• **Equipment Procurement:**
	  • Oversee the procurement process for new equipment and tools needed for laboratories. Ensure that acquisitions meet the latest technological standards and educational requirements.
	• **Maintenance and Calibration:**
	  • Implement a regular maintenance and calibration schedule for all laboratory equipment to ensure accuracy, safety, and reliability. Coordinate with technical staff to handle repairs and updates.
	• **Inventory Management:**
	  • Maintain an up-to-date inventory of all laboratory equipment, materials, and supplies. Ensure that inventory levels are sufficient to meet the demands of the curriculum and research activities.
	3. **Safety and Compliance:**
	• **Safety Protocols:**
	  • Develop and enforce safety protocols and guidelines for the use of laboratory facilities. Ensure that all students, faculty, and staff are trained in these safety procedures.
	• **Regulatory Compliance:**
	  • Ensure that all laboratories comply with local, national, and international safety and regulatory standards. Conduct regular safety audits and inspections.
	• **Incident Management:**
	  • Establish procedures for reporting and managing accidents or incidents in the laboratories. Conduct investigations and implement corrective actions as needed.
	4. **Support for Teaching and Research:**
	• **Faculty and Student Support:**
	  • Provide support to faculty and students in the use of laboratory facilities. This includes training on equipment usage, assistance with experimental setups, and troubleshooting.
	• **Integration with Curriculum:**
	  • Ensure that laboratory activities are well integrated with the curriculum. Work with faculty to develop laboratory

	exercises and experiments that reinforce theoretical concepts taught in lectures.
	• **Research Facilitation:**
	  • Support research activities by providing access to specialized equipment and resources. Assist faculty and students in setting up and conducting research experiments.
	5. **Resource Allocation and Budgeting:**
	• **Budget Planning:**
	  • Develop and manage the budget for learning facilities and laboratories. Prioritize expenditures based on the strategic plan and the needs analysis.
	• **Resource Allocation:**
	  • Allocate resources efficiently to ensure that all laboratories are adequately equipped and maintained. This includes funding for new acquisitions, maintenance, and upgrades.
	6. **Feedback and Continuous Improvement:**
	• **Stakeholder Feedback:**
	  • Collect and analyze feedback from faculty, students, and staff regarding the effectiveness and adequacy of laboratory facilities. Use this feedback to make informed decisions about improvements.
	• **Continuous Improvement:**
	  • Implement a continuous improvement process to enhance the quality of learning facilities and laboratories. Regularly review and update policies, procedures, and practices based on feedback and new developments in the field.

Authorities	1. **Decision-Making:** • The committee has the authority to make decisions regarding the acquisition, maintenance, and allocation of laboratory equipment and resources. This includes approving expenditures and prioritizing needs. 2. **Policy Development:** • The committee is authorized to develop and implement policies related to the operation and use of learning facilities and laboratories. These policies must ensure safety, compliance, and effective utilization of resources. 3. **Budget Management:** • The committee has the authority to develop and manage the budget for laboratory facilities. This includes planning for future investments, maintenance, and operational costs. 4. **Compliance Oversight:** • The committee is responsible for ensuring that all laboratory activities comply with relevant safety and regulatory standards. This

	includes conducting safety audits and ensuring that corrective actions are implemented. 5. **Reporting and Accountability:** • The committee is accountable for reporting on the status and needs of learning facilities and laboratories to the program leadership and other relevant stakeholders. This includes preparing reports on assessments, plans, and outcomes.

Alumni Affairs and Labor Market Needs Committee

Goal	The Alumni Affairs and Labor Market Needs Committee is integral to bridging the gap between the Mechanical Engineering Program (MEP) and its graduates, as well as ensuring that the program remains relevant to the evolving demands of the labor market. This committee is responsible for maintaining strong relationships with alumni, leveraging their experiences to enhance the program, and aligning the curriculum with industry needs.
Related Program Goal	**PG1: To deliver distinguished academic education that meets the needs of the labor market.** **PG3: Effective contribution to sustainable development and community service.**

Responsibilities	1. **Alumni Engagement:**
	
	• **Alumni Database Management:**
	  • Maintain an up-to-date database of alumni, including contact information, employment details, and career progression.
	• **Alumni Events:**
	  • Organize events such as reunions, networking sessions, and guest lectures featuring successful alumni. These events foster a sense of community and provide networking opportunities for current students.
	• **Alumni Feedback:**
	  • Collect feedback from alumni regarding their educational experiences and how well the program prepared them for their careers. Use this feedback to inform program improvements.
	2. **Labor Market Analysis:**
	
	• **Industry Trends Monitoring:**
	  • Continuously monitor trends and developments in the mechanical engineering industry. Identify emerging skills and competencies that are in demand.
	• **Employer Surveys:**
	  • Conduct regular surveys of employers to assess their satisfaction with the program's graduates and to understand their current and future workforce needs.
	• **Job Market Research:**
	  • Analyse job market data to identify employment rates, average salaries, and job placement success for graduates. Use this information to guide curriculum adjustments and career services.

	3. **Curriculum Alignment:**
	• **Industry Advisory Board Collaboration:**
	  • Work closely with the industry advisory board to ensure the curriculum aligns with industry standards and expectations. Incorporate their recommendations into curriculum updates.
	• **Course Relevance Review:**
	  • Regularly review and update course content to ensure it reflects the latest industry practices and technological advancements. Incorporate practical skills and real-world applications.
	4. **Career Services and Support:**
	• **Job Placement Assistance:**
	  • Provide resources and support for job placement, including resume writing workshops, interview preparation sessions, and job fairs.
	• **Internship Programs:**
	  • Develop and maintain partnerships with companies to offer internship opportunities for students. Ensure these internships provide valuable hands-on experience.
	• **Mentorship Programs:**
	  • Establish mentorship programs that connect students with alumni working in the industry. These mentors can provide career guidance, industry insights, and professional development advice.
	5. **Continuous Improvement:**
	• **Program Evaluation:**
	  • Assess the effectiveness of the mechanical engineering program in meeting labor market needs through regular evaluations. Use data from alumni and employer feedback to identify areas for improvement.
	• **Reporting and Accountability:**
	  • Prepare and present reports on alumni outcomes and labor market trends to program leadership. Ensure transparency in how data is used to drive program improvements.

Authorities	1. **Decision-Making Authority:** • The committee has the authority to make decisions regarding alumni engagement strategies, curriculum adjustments based on labor market needs, and career services initiatives. 2. **Resource Allocation:** • The committee is authorized to allocate resources for alumni events, career services programs, and labor market research activities. This includes managing budgets for these initiatives. 3. **Policy Development:**

	• The committee can develop policies related to alumni engagement, labor market analysis, and career services. These policies must align with the overall goals of the Mechanical Engineering Program and the university. 4. **Partnership Establishment:** • The committee has the authority to establish and maintain partnerships with industry organizations, employers, and professional associations. This includes negotiating agreements for internships, guest lectures, and other collaborative efforts. 5. **Data Collection and Analysis:** • The committee is responsible for collecting and analyzing data related to alumni outcomes and labor market trends. This authority includes designing and administering surveys, conducting interviews, and utilizing external data sources. 6. **Reporting:** • The committee is accountable for reporting its findings and recommendations to program leadership. This includes preparing detailed reports on alumni success, job placement rates, and industry needs.

Curricula and Courses Development Committee

Goal	The Curricula and Courses Development Committee plays a crucial role in ensuring that the Mechanical Engineering Program (MEP) maintains a rigorous, relevant, and up-to-date curriculum that meets the educational standards and prepares students for professional success. This committee is responsible for the continuous review, enhancement, and innovation of course content and curriculum structure.
Related Program Goal	**PG1: To deliver distinguished academic education that meets the needs of the labor market.** **PG4: Offer a stimulating and attractive educational environment.**

Responsibilities	1. **Curriculum Review and Assessment:**
	
	• **Regular Curriculum Review:**
	  • Conduct periodic reviews of the entire mechanical engineering curriculum to ensure alignment with industry standards, accreditation requirements, and educational best practices.
	• **Learning Outcomes Assessment:**
	  • Evaluate whether the program's learning outcomes are being met effectively. Analyze assessment data to identify areas for improvement.
	2. **Course Development and Enhancement:**
	• **New Course Development:**

- Design and develop new courses that address emerging trends and technologies in mechanical engineering. Ensure these courses fill gaps in the current curriculum.
- **Course Syllabi Updates:**
  - Regularly update course syllabi to include new research, technologies, and methodologies. Ensure that course content remains current and relevant.
- **Integration of Practical Skills:**
  - Ensure that practical, hands-on learning experiences are integrated into the curriculum. This includes laboratory work, design projects, and real-world problem-solving activities.

3. **Stakeholder Engagement:**

- **Industry Advisory Board Collaboration:**
  - Work closely with the industry advisory board to gather input on curriculum relevance and industry needs. Incorporate their recommendations into curriculum updates.
- **Faculty and Student Feedback:**
  - Collect and analyze feedback from faculty and students regarding course content and delivery. Use this feedback to inform curriculum enhancements.

4. **Accreditation and Standards Compliance:**

- **Accreditation Requirements:**
  - Ensure that the curriculum meets the standards and requirements of accreditation bodies. Prepare necessary documentation and reports for accreditation reviews.
- **Benchmarking:**
  - Benchmark the program's curriculum against leading mechanical engineering programs globally. Identify best practices and areas for improvement.

5. **Interdisciplinary Integration:**

- **Cross-Department Collaboration:**
  - Collaborate with other departments to integrate interdisciplinary courses and modules. Ensure that students receive a well-rounded education that includes knowledge from related fields.

6. **Technology and Innovation:**

- **Incorporation of Technology:**
  - Integrate the latest technological tools and software into the curriculum. Ensure that students are proficient in using industry-standard tools.
- **Innovative Teaching Methods:**
  - Promote and implement innovative teaching methods, such as project-based learning, flipped classrooms, and online learning modules.

7. **Continuous Improvement:**

- **Feedback Mechanism:**

	• Develop and implement mechanisms for continuous feedback on course content and teaching effectiveness. Use this feedback for ongoing curriculum improvement. • **Professional Development:** • Encourage and support faculty professional development to ensure they remain current with industry trends and teaching methodologies.
Authorities	1. **Decision-Making Authority:** • The committee has the authority to make decisions regarding curriculum changes, course updates, and the introduction of new courses. These decisions are made in consultation with relevant stakeholders and are subject to final approval by the program leadership. 2. **Resource Allocation:** • The committee is authorized to allocate resources for curriculum development activities, including funding for new course materials, technology integration, and faculty training. 3. **Policy Development:** • The committee can develop policies related to curriculum design, course delivery, and assessment methods. These policies ensure consistency and quality across the program. 4. **Approval of Course Proposals:** • The committee has the authority to review and approve new course proposals submitted by faculty members. This includes evaluating the relevance, content, and feasibility of proposed courses. 5. **Collaboration with External Partners:** • The committee can establish and maintain collaborations with industry partners, academic institutions, and professional organizations to enhance the curriculum. This includes negotiating agreements for joint programs, guest lectures, and resource sharing. 6. **Reporting and Accountability:** • The committee is responsible for reporting its activities, decisions, and outcomes to the program leadership. This includes preparing detailed reports on curriculum reviews, course updates, and stakeholder feedback.

3.4 Administration and Management Schedule

Department Council Meeting Schedule:

1. First meeting: first week of the semester.
2. Subsequent Meetings: Scheduled for Weeks 2, 4, 7, 9, 11, and 15.

First Week Meeting Agenda:

Communicate the following points to faculty members:

1. Provide updates on the curriculum, Program Learning Outcomes (PLOs), mission, and program goals, if applicable.
2. Explain the concept and purpose of the program's operational plan.
3. Share the current status of the accreditation process.
4. Review the Quality Assurance Manual and its key contents.
5. Present the composition of committees, their members, responsibilities, and meeting schedules.
6. Emphasize the need for committees to begin work immediately and prepare plans for activities based on their assigned responsibilities.
7. Discuss ongoing and planned improvement initiatives.
8. Review the faculty schedule outline.
9. Ensure faculty provide students with detailed course information at the start of each term, covering learning outcomes, teaching and learning strategies, assessment methods and dates, course expectations, and feedback mechanisms.
10. Share the university's policies on academic integrity, including definitions of plagiarism, cheating, and academic misconduct.
11. Discuss with students the consequences of violating academic integrity policies and the importance of maintaining ethical standards.

Weekly schedule of Main Tasks

Week	First Semester Tasks	Second Semester Taks
1	1. Departmental council meeting 2. HoD and Graduate Studies, Scientific Research & Society Services Committee should start forming the External Advisory Board committee. The formation should be discussed in the department council in Week 4.	1. Departmental council meeting
2	1. All committees should start meeting to prepare their annual activity plans and any other related plans. These plans must be submitted to the department council by Week 4. 2. Under supervision of Academic Affairs, Advising, and Extracurricular Activities Committee, Faculty members Should Provide students with comprehensive course information. 3. The Academic Affairs, Advising, and Extracurricular Activities Committee should start preparing an annual plan for Extracurricular activities. 4. The Academic Accreditation & Development and Quality committee should start preparing the annual operational plan. The plan must be submitted to the department council by Week 4. 5. The Academic Accreditation & Development and Quality committee should review and update the assessment plan for the current academic year. The plan must be submitted to the department council by Week 4. 6. The Academic Accreditation & Development and Quality committee should start preparing the PLO assessment report for the previous academic year. The report must be submitted to the department council by Week 4. 7. The Academic Accreditation & Development and Quality committee should start Collecting and refining improvement actions from all course reports of the 2nd semester of the	1. Committee meetings 2. Under supervision of Academic affairs and students advising committee, Faculty members Should Provide students with comprehensive course information. 3. The Academic Accreditation & Development and Quality assessment committee should start Collecting and refining improvement actions from all course reports of the 1st semester of the current academic year. The report must be submitted to the department council by Week 4.

	previous academic year. The report must be submitted to the department council by Week 4. 8. The Academic Accreditation & Development and Quality committee should start preparing the APR. The report must be submitted to the department council by Week 4. 9. The Academic Accreditation & Development and Quality Committee should start preparing the KPIs analysis report. The report must be submitted to the department council by Week 4. 10. The Academic Accreditation & Development and Quality Committee should collect results of course evaluation surveys from faculty members for the two semesters of the last year. Results should be analyzed and added to the surveys analysis report, APR, KPIs report. The reports must be submitted to the department council by Week 4. 11. The Graduate Studies, Scientific Research & Society services Committee should start preparing an annual plan for faculty members training. The plan must be submitted to the department council by Week 4. 12. The Graduate Studies, Scientific Research & Society services Committee should start preparing an annual plan for community services and field trips. The plan must be submitted to the department council by Week 4. 13. The Academic Accreditation & Development and Quality Committee should start preparing a plan for monitoring faculty adherence to teaching, learning, and assessment methods in the program and course specifications. The plan must be submitted to the department council by Week 4.	
3	1. The Academic Affairs, Advising, and Extracurricular Activities Committee communicates essential information to students (See responsibilities for more details) 2. The Field Training and Graduate Project committee should collect, analyze, and evaluate feedback from students and industry partners, gathered through both discussions and	1. The Academic Affairs, Advising, and Extracurricular Activities Committee communicates essential information to students (See responsibilities for more details)

	surveys, to monitor, evaluate, and improve the effectiveness of field training and supervision. The report must be submitted to the department council by Week 4.	
4	1. Departmental council meeting 2. Before the department council meeting, the following should be submitted: 2.1 Activities plan for all committees 2.2 Operational plan 2.3 PLO assessment report 2.4 A comprehensive report listing all the collected and refined improvement actions from the course reports. 2.5 KPIs analysis report 2.6 APR 2.7 Survey Analysis Report 2.8 Plan for faculty training 2.9 Plan for community service activities 2.10 plan for Extracurricular activities. 2.11 LO assessment plan 3. After the department meeting, The Academic Accreditation & Development and Quality Committee should start reviewing and compiling actions to build a comprehensive improvement plan. 4. Approval of the External Advisory Board committee 5. The HoD should call the External Advisory Board to meet next week.	1. Departmental council meeting
5	1. HoD should send the approved report of the actions collected, course reports to all faculty members. 2. Committee and Department MoM for approval of the comprehensive improvement plan. 3. After approval**,** the Academic Accreditation & Development and Quality Committee should start distribution and implementation of the improvement plan.	
6	1. Committee meetings	1. Committee meetings

	2. The Learning Facilities & Laboratories Committee should start conducting surveys to: • Evaluate the adequacy and appropriateness of learning resources and services, update them as needed, and use feedback to improve them. • Ensure appropriate technologies, services, and learning environments for distance or e-learning courses. • Evaluate the effectiveness of learning resources, facilities, and equipment, using results for improvement.	
7	1. Departmental council meeting	6. Departmental council meeting
8	1. Based on the survey's results, the Learning Facilities & Laboratories Committee should start preparing an analysis report that identifies areas of improvement and propose actions for improvement. The report should be approved from the committee in week 10 and from the department in week 11.	
9		
10	1. Committee meetings	1. Committee meetings 2. Academic Accreditation & Development and Quality Committee should start coordinating, with respective committees, the stakeholders Surveys and start preparing Surveys analysis Report. Report must be submitted to the department council by Week 15. 2.1 Student Experience Survey (SES) is the same as Program Evaluation Survey (PES). 2.2 Alumni Evaluation Survey (AES). 2.3 Employer Evaluation Survey (EES). 2.4 Academic staff satisfaction survey (SSS-AC). 2.5 Administrative staff satisfaction survey (SSS-AD).
11	1. Departmental council meeting 2. Learning Facilities & Laboratories Committee should start implementation of improvement plan based on the conducted surveys.	1. Departmental council meeting

12	1. Academic Affairs, Advising and Extracurricular Activities Committee conducts a survey for students about academic advising and prepares a survey analysis report. The report should identify areas for improvement and propose an action plan to be implemented in the second semester. The report must be submitted to the department council by Week 15. 2. The Graduate Studies, Scientific Research & Society Services Committee conducts a survey about community services and prepares a survey analysis report. The report should identify areas for improvement and propose an action plan to be implemented in the second semester. The report must be submitted to the department council by Week 15.	1. Comprehensive Operational plan report must be submitted to the department council by Week 15. 2. All committees should start preparing comprehensive follow up and end of year Reports and must be submitted to the department council by Week 15.
13	1. Faculty members should start working on their Course Binder submissions, which include CS, CR, Assessment Excel File, and SOAR. These submissions should be completed and ready by the end of the semester. 2. The operational plan report must be submitted to the department council by Week 15. 3. All committees should start preparing End of Semester Reports, which must be submitted to the department council by Week 15.	1. Faculty members should start working on their Course Binder submissions, which include CS, CR, Assessment Excel File, and SOAR. These submissions should be completed and ready by the end of the semester.
14	1. Committee meetings 2. The Academic Accreditation & Development and Quality Committee should prepare a report about faculty adherence to teaching, learning, and assessment methods in the program and course specifications and submit it to the department meeting in week 15.	1. Committee meetings 2. HoD assesses faculty performance based on established criteria and provides feedback for improvement. 3. Academic Accreditation & Development and Quality Committee should start collecting follow up reports on the improvement plans and submit it to the department council of week 15.
15	1. Departmental council meeting	1. Departmental council meeting

3.5 Controlling and monitoring the committee’s work

 Each committee is assigned specific operational plan initiatives along with additional tasks aligned with its designated responsibilities.
 At the beginning of each academic year, committees develop a procedural work plan for operational initiatives and other assigned tasks.
 Responsibilities are distributed among all faculty members, with a defined timeline for each action in the plan.
 The committee's work plan is submitted to the Department Council for discussion and recommendation for approval.
 The Committee Chairman oversees the management of operational plan initiatives and other assigned responsibilities.
 The Committee Chairman collaborates with the supporting unit at the college level (if available) to ensure the effective execution of operational initiatives and coordinates with relevant college entities for technical and logistical support within the specified timeframe.
 The Committee Chairman and the Head of the Department (HoD) monitor operations and procedures through a monthly reporting system.
 A comprehensive progress report or Minutes of Meeting (MoM) is submitted monthly to the Department Council.
 Based on performance indicator achievements, unit coordinators and Committee Chairmen conduct an annual self-evaluation of work plan implementation.
 Following the self-evaluation, committees develop improvement plans to address areas needing enhancement to meet target benchmarks.
 The Academic Accreditation & Development and Quality committee performs an annual review to assess the achievement of target benchmarks and the quality of supporting evidence.
 The Development and Quality Coordinator (DQC) Chairman compiles an achievement report for the operational plan, incorporating self-evaluation findings, proposed improvement plans, and supporting evidence.
 The achievement report is presented to the Department Council, where Committee Chairmen highlight challenges encountered and discuss proposed improvement plans.
The Department Council submits the achievement report and improvement plans to the College Council for approval, recommending their incorporation into the following year's operational plan and forwarding them to relevant support units.

4. The BSc MEP Quality Management System

The B.Sc. in Mechanical Engineering program at the University of Tabuk upholds and improves the quality of its education through a structured Quality Management System (QMS). This section details the policies, procedures, and activities that ensure compliance with academic standards, fulfillment of stakeholder expectations, and adherence to accreditation requirements.

4.1 Quality Assurance Policy

The B.Sc. MEP Quality Assurance Policy is committed to upholding the highest standards in academic quality, research excellence, student experience, faculty development, administrative efficiency, and stakeholder engagement. The program continuously evaluates and enhances its offerings to align with national and international standards.

The Quality Management System (QMS) operates on principles of continuous improvement, accountability, collaboration, evidence-based decision-making, a student-centered approach, and adaptability. These principles ensure that quality assurance processes remain rigorous, transparent, and effective.

The program fosters a culture of continuous improvement and stakeholder satisfaction by regularly reviewing and updating curricula, promoting professional development, gathering and acting on feedback, implementing strong monitoring and evaluation mechanisms, encouraging excellence, and maintaining transparency and accountability across all processes.

4.2 Continuous Improvement Through the PDCA Cycle

The PDCA (Plan-Do-Check-Act) cycle, illustrated in Figure 2, is a key framework for managing and improving the quality of the B.Sc. Mechanical Engineering (ME) program. It provides a systematic approach to problem-solving and continuous enhancement, ensuring all program aspects are regularly assessed and refined.

The PDCA cycle represents essential steps in quality management, including planning, assurance, control, and improvement. The cycle begins with the **Plan** phase, where goals are set, quality standards are defined, and action plans are developed, aligning with quality planning. The **Do** phase focuses on quality assurance by implementing these plans and ensuring systematic execution. The **Check** phase involves quality control, where outcomes are monitored and evaluated against established standards to verify compliance. The **Act** phase drives quality improvement by identifying areas for enhancement and implementing recommendations to refine the quality management system.

This iterative process ensures continuous improvement and reinforces a closed-loop system, maintaining and advancing the overall quality of the B.Sc. Mechanical Engineering program.

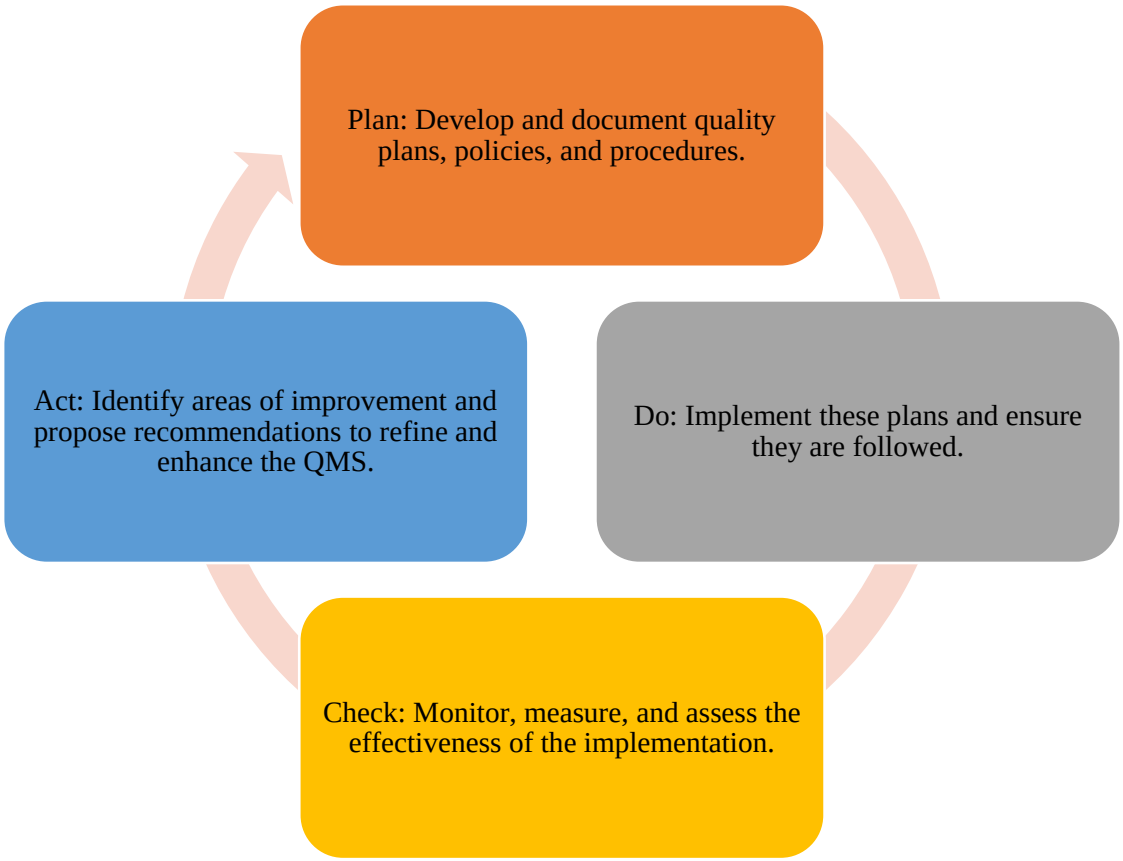

Figure 2 PDCA cycle for BSc MEP QMS

Plan (Quality Planning)

The **Plan** phase focuses on defining quality objectives and processes to achieve desired outcomes. It establishes a foundation for continuous improvement by setting clear goals and identifying areas for future enhancement. Quality planning occurs at two key stages: initially, to establish fundamental objectives and processes for the program, and later, to implement actions based on insights from the **Do** phase. This ensures a strong initial framework while allowing for continuous adaptation based on assessments and feedback.

The quality planning includes:

- Aligning Program Learning Outcomes (PLOs) with national standards
- Designing teaching and learning strategies to achieve these outcomes
- Developing effective assessment methods
- Structuring the curriculum to ensure comprehensive knowledge and skill coverage
- Aligning the program's mission with institutional goals
- Planning staffing needs
- Developing the operational plan

- Setting performance indicators
- Establishing strategies for integrity, fairness, and stakeholder communication

Do (Quality Assurance)

The **Do** phase focuses on implementing planned processes and procedures. It involves executing established strategies systematically while integrating mechanisms to capture real-time data and feedback for continuous improvement. This phase includes applying teaching, learning, and evaluation strategies, ensuring alignment with learning outcomes, providing necessary training, and maintaining accurate course and program information.

Check (Quality Control)

The **Check** phase involves monitoring and evaluating the effectiveness of implemented processes. Activities include measuring performance against established standards, assessing learning outcomes, tracking key performance indicators (KPIs), and reviewing the quality of field training. This phase also examines student performance data, evaluates faculty effectiveness, and assesses the adequacy of student services. Feedback from students, faculty, alumni, and employers is collected to identify areas for improvement and ensure the program meets stakeholder expectations.

Act (Quality Improvement)

The **Act** phase drives continuous improvement by implementing corrective and preventive actions based on insights from the **Check** phase. This involves updating processes, resources, and policies in response to feedback and performance data. Periodic evaluations and necessary adjustments are made to enhance program quality. By systematically applying these improvements, the PDCA cycle ensures the ongoing evolution of the quality management system, fostering continuous enhancement and increasing stakeholder satisfaction in the B.Sc. Mechanical Engineering program.

4.3 Internal Quality Assurance Processes

Internal Quality Assurance (IQA) consists of :

- Systematic processes aimed at maintaining and enhancing the quality and effectiveness of the B.Sc. Mechanical Engineering program.
- Activities include curriculum reviews, student and faculty feedback mechanisms, performance monitoring through key performance indicators (KPIs), and faculty development initiatives. These efforts ensure that the program consistently meets and surpasses established quality standards. The following section will outline the specific procedures and processes for implementing IQA within the program's quality management framework.

4.4 External Quality Assurance Processes

External Quality Assurance (EQA) ensures that the B.Sc. Mechanical Engineering program undergoes objective assessment and continuous enhancement to meet national and international standards. EQA processes validate program quality and relevance in the academic and professional landscape through several key components:

Accreditation and Certification:

The program seeks accreditation from recognized bodies such as the National Commission for Academic Accreditation and Assessment (NCAAA) and the Accreditation Board for Engineering and Technology (ABET). Accreditation confirms compliance with established quality standards and serves as an external benchmark, ensuring that the program meets rigorous educational and professional criteria.

Stakeholder Engagement:

Industry partners, employers, and alumni provide feedback on program relevance and effectiveness. This input informs curriculum adjustments and program enhancements, improving graduate employability and aligning education with market demands.

Benchmarking:
Comparing the program's performance and practices with those of internal and external institutions helps identify areas for innovation and improvement, ensuring alignment with evolving academic and industry standards.

Regulatory Compliance:

The program adheres to national and international regulations, including the Specialized Academic Standards developed by the Education and Training Evaluation Commission (ETEC) under "Key Learning Outcomes." These standards define minimum curriculum requirements through collaboration with government, private sector, and academic stakeholders. Additionally, compliance with the National Qualifications Framework in Saudi Arabia (NQF-KSA) ensures that program qualifications align with recognized national and international standards.

Through these EQA processes, the B.Sc. Mechanical Engineering program benefits from external evaluations, industry insights, and adherence to high-quality standards, supporting continuous improvement and program recognition.

4.5 Documentation, Reporting, and tools for Quality Assurance Continuous Improvement

To ensure and elevate the quality of the BSc Mechanical Engineering program, various tools and processes are used for documentation, reporting, and records management. These tools help monitor, evaluate, and enhance different facets of the program, ensuring compliance with both internal and external standards. The primary tools include:

Course Reports
Course reports offer a thorough analysis of each course, covering aspects like student results, grade distribution, comments on student grades, course learning outcomes, and course learning outcomes assessment results. They also include recommendations, uncovered topics, and a course improvement plan if needed. This detailed documentation helps identify strengths and areas for improvement within each course.

Annual Program Report
The annual program report compiles data and evaluations to provide an overview of the program's performance over the academic year. It includes program statistics and assessments, such as program learning outcomes assessment and analysis according to the PLOs assessment plan, evaluation of courses, students' evaluation of program quality, scientific research and innovation during the reporting year, community partnership, other evaluations (if any), program key performance indicators (KPIs), challenges and difficulties encountered, and the program development plan. This comprehensive report ensures continuous evolution and adaptation to meet academic and industry standards.

Standardized Exam Cover Page
All instructors must use a standardized exam cover page designed and approved by the ME department. This cover page records critical data, including the course learning outcomes (CLOs) assessed in the exam, the mapping between questions and CLOs, the maximum grade for each question, and the student's grade for each question. This ensures consistency and clarity in the assessment process.

CLO-PLO Mapping
Course learning outcomes (CLOs) for each course are prepared and mapped to the program learning outcomes (PLOs). The CLOs and mapping are approved by the ME department and included in the course specifications. This alignment ensures each course contributes effectively to the overall program learning outcomes.

Assessment Excel File
To streamline calculations, the BSc ME program uses an assessment tool developed in Microsoft Excel. This tool allows the instructor to compute assessment results for the PLOs associated with the course under evaluation. The Excel file takes data from the exam cover page (Question-CLO mapping) and CLO-PLO mapping as input, generating the percentage of PLO attainment in the course. This efficient tool aids in precise and consistent assessment across courses.

Student Outcome Assessment Report (SOAR)
Instructors use the data from the Excel sheet to prepare the SOAR form, which is the course-level assessment of PLOs. The SOAR form includes course information, summary of assessment results, instructor's comments and recommendations for improvement of the assessment process, and comments on the assessment results. It is integrated into the course binder and course report, simplifying the process for the assessment committee to gather data from individual courses.
PLO Assessment Report

The PLO assessment report serves to aggregate data and can be viewed as the program-level assessment of PLOs. This comprehensive report helps understand the overall attainment of program learning outcomes and identifies areas needing improvement.

End of Semester Reports
At the end of each semester, program committees prepare reports summarizing activities, achievements, challenges, and future plans. These reports ensure that efforts and outcomes are documented and reviewed for continuous improvement.

Comprehensive Follow-Up Reports
These reports track the implementation of operational plan initiatives, improvement plans from various components such as KPI reports, PLO assessment reports, and survey analysis reports. Regular follow-up ensures plans are executed and necessary adjustments are made promptly.

Surveys and Feedback Forms and Analysis Reports
Surveys and feedback forms gather input from students, faculty, alumni, and employers. These insights are analyzed to create comprehensive reports identifying program strengths and weaknesses. These reports form the foundation for developing actionable improvement plans, enhancing student experiences, aligning curriculum with industry needs, and strengthening the program's reputation.

Key Performance Indicators (KPIs) Reports
KPIs are essential metrics used to evaluate the program's performance relative to targets and benchmarks. Metrics include student learning experiences, program completion rates, first-year student retention, employability rates, postgraduate enrollment, student-to-teaching staff ratio, and faculty research productivity. The report analyzes these KPIs to pinpoint strengths and identify improvement opportunities, informing the development of actionable improvement plans.

Assessment Rubrics for Professional PLOs
Rubrics provide clear criteria for evaluating professional program learning outcomes, ensuring consistency and objectivity in the assessment process.

Self-Study Report (SSR)
The SSR is a critical self-assessment of the BSc Mechanical Engineering Program (BSc MEP). It analyzes the program's strengths and weaknesses against accreditation standards set by NCAAA and ABET. The report demonstrates how the program's mission, goals, curriculum, learning outcomes, and assessment methods deliver a high-quality educational experience. By providing evidence-based data on student achievement, faculty expertise, and program processes, the SSR fosters transparency and accountability, allowing NCAAA and ABET to evaluate the program's effectiveness and commitment to continuous improvement.

4.6 Closing the Loop

"Closing the Loop" is a crucial element of the Quality Management System (QMS) for the BSc Mechanical Engineering Program. It guarantees that feedback and evaluation results are efficiently turned into actionable improvements. This structured process converts insights from

various program components into specific actions aimed at boosting the program's quality assurance practices and ensuring overall stakeholder satisfaction. The process follows these steps:

1. **Identifying Areas for Improvement:**
   Conduct a thorough analysis of evaluation results from learning outcomes assessments, KPIs, surveys, operational plan reports, External Advisory Board meetings, and program committee findings to pinpoint specific areas requiring attention and change.
2. **Developing Action Plans:**
   Create detailed and actionable plans to address identified issues. These plans should outline specific steps, assign responsibilities, and set clear timelines for implementation.
3. **Implementing Actions:**
   Put the developed action plans into practice within the relevant areas, ensuring that all proposed changes are executed effectively.
4. **Monitoring and Evaluation:**
   Continuously monitor the impact of the implemented actions to verify that they are achieving the intended outcomes. Regular evaluation ensures that the actions are effective and contributing to overall improvement.
5. **Feedback and Adjustment:**
   Collect feedback on the success of the implemented actions and make necessary adjustments based on this feedback. This iterative process helps in optimizing results and further refining quality assurance practices.

4.7 The BSc MEP Review Cycles

The review cycles are vital parts of the Quality Management System (QMS) for the BSc Mechanical Engineering (ME) program, ensuring continuous improvement of academic and administrative practices. These cycles provide structured timelines and methodologies for systematically evaluating and enhancing various aspects of the program. By adhering to these cycles, the program can effectively monitor its performance, align with institutional and accreditation standards, and proactively respond to emerging challenges and opportunities.

Review Cycles and PDCA Cycle

The review process of the BSc MEP primarily falls under the "Check" phase of the PDCA (Plan-Do-Check-Act) cycle provided in Section 4.2, though it spans elements of other phases as well. Here's how it integrates into each phase:

- **Plan**: Establish objectives and processes necessary to deliver results in line with expected outcomes. This includes setting criteria, defining performance indicators, and developing review plans.
- **Do**: Implement the plan by executing academic and administrative activities. This phase focuses on carrying out the processes and tasks according to the established plan.
- **Check**: Monitor and evaluate the implemented processes by comparing results against planned objectives. The review process involves collecting data, analyzing key performance indicators, conducting surveys, and comparing outcomes against benchmarks and goals. This phase includes identifying strengths and weaknesses through periodic and comprehensive evaluations.

- **Act**: Apply actions to improve the process based on review results. Action plans are developed and implemented to address identified issues and enhance overall performance based on findings from the review process.

Thus, while the review process is an integral part of the Check phase, involving monitoring, evaluating, and analyzing results to ensure objectives are met and areas for improvement are identified, it also plays a crucial role in the other phases of the PDCA cycle to ensure continuous improvement and effective quality management.

Review Cycles in BSc MEP

In the BSc MEP, the review process is categorized into two distinct cycles: the annual review cycle and the comprehensive review cycle, each with a specific focus and scope to maintain the highest standards of quality and excellence.

BSc MEP Annual Review Cycle

The annual review cycle is a critical part of the continuous improvement process for the BSc Mechanical Engineering (ME) program. This cycle focuses on the regular monitoring and evaluation of key performance indicators (KPIs), learning outcomes, and other essential metrics on a yearly basis. The annual review involves collecting data from course evaluations, student feedback, faculty performance assessments, and administrative reports. These data points are analyzed to identify trends, areas of success, and opportunities for improvement. The insights gained from the annual review inform the development of short-term action plans aimed at addressing immediate concerns and enhancing the overall quality of the program.

The results of the annual review cycle, along with the actionable improvement plan, are documented and presented in the Annual Program Report (APR). This report includes a summary of findings and outlines steps for addressing identified areas for improvement. Accompanying the APR are separate, detailed reports: the KPIs Analysis Report, the Surveys Analysis Report, the PLO Assessment Report, and the Operational Plan Report. Each of these attachments provides in-depth analysis and comprehensive data relevant to their respective areas. The KPIs Analysis Report details performance metrics and trends, the Surveys Analysis Report captures stakeholder feedback, the PLO Assessment Report evaluates student learning outcomes, and the Operational Plan Report reviews the progress and effectiveness of implemented initiatives. By presenting these reports separately, the APR ensures clarity and facilitates a focused review of each critical aspect of the program's performance.

Table 5 provides an overview of the annual review cycle. It outlines the key activities that take place throughout the cycle, along with the corresponding committees responsible for each activity. The table also details the resources available to support these activities, including assisting tools, documentation, and evaluation materials.

Table 7 Annual Review Cycle Activities and surveys

SN	Activity	Responsibility	Tools/Documentation
1.	Assessment of Course Learning Outcomes	Course Instructor	Assessment Excel File Course Report
2.	Preparing Course Report (CR)	Course coordinators and Course instructors	Course Report
3.	Course evaluation survey	Course instructors, Course coordinators and the Academic Accreditation & Development and Quality committee	Survey Analysis Report Annual Program Report
4.	Course-level assessment of technical PLOs	Course instructors and Course coordinators	SOAR
5.	Course-level assessment of professional PLOs	SDP Advisors and Field Training, and Graduate Project Committee	Professional Outcomes Assessment Excel File
6.	Program-level assessment of professional PLOs according to the PLO Assessment Plan	Academic Accreditation & development and Quality committee	PLO assessment report
7.	Stakeholders Surveys: • Student Experience Survey (SES). • Program Evaluation Survey (PES). • Alumni Evaluation Survey (AES). • Employer Evaluation Survey (EES). • Academic staff satisfaction survey (SSS-AC). • Administrative staff satisfaction survey (SSS-AD).	Academic Accreditation & development and Quality committee	Survey Analysis Report
8.	Academic advising survey	Academic Affairs, Advising, and Extracurricular Activities	Analysis Report, Committee MoM, or the committee end of end-of-semester report
9.	Effectiveness of Field Training	Field Training and Graduate Project Committee	Analysis Report, Committee MoM, or the committee end of semester report
10.	Community Services Survey	Graduate Studies, Scientific Research & Society Services Committee	Analysis Report, Committee MoM, or the committee end of semester report

11.	Facilities Surveys: • Evaluate the adequacy and appropriateness of learning resources and services, update them as needed, and use feedback to improve them. • Ensure appropriate technologies, services, and learning environments for distance or e-learning courses. • Evaluate the effectiveness of learning resources, facilities, and equipment, using results for improvement.	Learning facilities & Laboratories Committee	Analysis Report, Committee MoM, or the committee end of semester report
12.	Evaluation of Operational plan performance indicators s and implementation of its initiatives	Academic Accreditation & development and Quality committee	Operational Plan Report
13.	Analysing Program KPI report	Academic Accreditation & development and Quality committee	
14.	Preparing the Annual program report (APR)	Academic Accreditation & development and Quality committee	APR
15.	Annual program report revision	Deanship of Development and quality	
16.	Collecting and refining improvement actions from all course reports	Academic Accreditation & development and Quality committee	Comprehensive Report on the Improvement Plan for Program Courses' CLOs
17.	Monitoring faculty adherence to teaching, learning, and assessment methods in the program and course specifications.	Curricula and Courses Development Committee	Report on the adherence to teaching, learning, and assessment.
18.	Updating the Website	Academic Affairs, Advising and Extracurricular Activities	Program Website
19.	Meeting with the program External Advisory Board	HoD and the Alumni Affairs and Labor Market Needs Committee	MoM
20.	Summarizing the committee's activities, achievements, challenges, and future plans	Department council	End-of-semester report
21.	Reviewing and compiling actions from all program committees to build a comprehensive improvement plan.	Academic Accreditation & development and Quality committee	Comprehensive improvement plan. APR
22.	Preparing a comprehensive follow-up for actions proposed in the program improvement plan.	Academic Accreditation & development and Quality committee	Comprehensive Follow-up Report
23.	Evaluation of faculty performance	Head of the Department	Assessment Forms

BSc MEP Comprehensive Review Cycle

The comprehensive review cycle for the BSc Mechanical Engineering (ME) program is conducted every five to six years or as required by institutional or accrediting bodies. This cycle offers a thorough evaluation of the BSc ME program, covering curriculum design, teaching strategies, faculty qualifications, and resource allocation. During this period, the program implements all planned activities, processes, and procedures. Some activities are evaluated periodically rather than annually due to workload and time constraints or the nature of the action plans. This approach ensures the sustainability of the continuous improvement process. For example, modifications to the program's mission, goals, program learning outcomes (PLOs), or major curriculum changes, such as adding or removing compulsory courses, often require more time to develop and implement. These significant adjustments are typically evaluated within the comprehensive review cycle to ensure they are effectively integrated and align with long-term strategic objectives.

Through its comprehensive review cycle, the BSc MEP ensures adherence to both national (NCAAA) and international (ABET) accreditation standards and criteria. To achieve this, the program prepares self-study reports (SSRs) that align with the requirements of these accrediting bodies. The criteria are distributed among program committees, each tasked with preparing their respective sections of the SSR. These committees are responsible for presenting policies, procedures, and practices, as well as gathering information, data, and any other necessary documentation to demonstrate compliance with the specified criteria. Additionally, they organize, collect, and provide the necessary evidence to support the program's adherence to these standards. Table 8 illustrates the Mapping of NCAAA Criteria to Responsible Committees, while Table 9 presents the Mapping of ABET Criteria to Responsible Committees.

Table 8 Mapping of NCAAA Criteria to Responsible Committees

Criteria Code	Criteria Statement	Responsible Committee
1-1-1	The program mission and its goals are consistent with the mission of the institution/college and guide all its operations and activities.	Academic Accreditation & Development and Quality committee
1-1-2	The program has the sufficient number of qualified staff to perform its administrative, professional and technical tasks, and they have defined tasks and authorities. *	Academic Accreditation & Development and Quality committee
1-1-3	The program provides an organizational climate and a supportive academic environment.	Academic Accreditation & Development and Quality committee
1-1-4	The program management monitors the achievement of its goals through specific performance indicators and actions are taken for improvement.	Academic Accreditation & Development and Quality committee
1-1-5	The program management applies mechanisms ensuring integrity, fairness, and equality in all its academic and administrative practices, and between the male and female student sections and branches (if any).	Academic Affairs, Advising and Extracurricular Activities
1-1-6	The program builds on the views of professionals and experts in the program specialization, to contribute to its evaluation, development, and performance improvement.	Alumni Affairs and Labor Market Needs Committee
1-1-7	The program management provides reliable and publicly disclosed information to the community about the program description, performance, and achievements that suits the needs of the stakeholders.	Graduate Studies, Scientific Research & Society services Committee
1-1-8	The program management is committed to activating the values of the scientific integrity, intellectual property rights, rules of ethical practices, and proper conduct in all academic, research, administrative, and service fields and activities. *	Graduate Studies, Scientific Research & Society services Committee
1-1-9	The program management applies the systems, regulations, and procedures that are approved by the institution/college, including those related to grievance, complaints, and disciplinary cases.	Academic Accreditation & Development and Quality committee

1-2-1	The program management implements an effective quality assurance and management system that is consistent with the institution quality system.	Academic Accreditation & Development and Quality committee
1-2-2	The program analyzes the key performance indicators and the evaluation data annually and results are used in planning, development, and decision-making processes. *	Academic Accreditation & Development and Quality committee
1-2-3	The program conducts a periodic, comprehensive evaluation and prepares plans for improvement; and follows up its implementation.	Academic Accreditation & Development and Quality committee
2-1-1	The program identifies its intended learning outcomes that are consistent with its mission, and aligned with the specialized academic standards and the graduate attributes at the institutional level; they are approved, publicly disclosed, and periodically reviewed.	Academic Accreditation & Development and Quality committee
2-1-2	The learning outcomes are consistent with the requirements of the National Qualifications Framework, academic standards and labor market needs. *	Curricula and Courses Development Committee
2-1-3	The program identifies the learning outcomes for the different tracks (if any).	Curricula and Courses Development Committee
2-1-4	The program applies appropriate mechanisms and tools for measuring the learning outcomes, and verifying their achievement according to specific performance levels and assessment plans. *	Academic Accreditation & Development and Quality committee
2-1-5	The Program implements a clear and approved teaching, learning and evaluation strategy that articulates its educational philosophy and ensures that the Program's intended learning outcomes are achieved.	Academic Accreditation & Development and Quality committee
2-2-1	The curriculum design considers fulfilling the program goals and learning outcomes, and the educational, scientific, technical and professional developments in the field of specialization; and is periodically reviewed. *	Curricula and Courses Development Committee
2-2-2	The study plan ensures the balance between the general and specialty requirements, and between theoretical and applied aspects; and it takes into account the sequencing and integration of the courses. *	Curricula and Courses Development Committee

2-2-3	The construction of the program study plan considers the identification of exit-points requirements (if any) in accordance with international practices and similar programs.	Curricula and Courses Development Committee
2-2-4	The learning outcomes in the courses are aligned with the program learning outcomes (e.g., Matrix for the alignment of the learning outcomes of the courses with program learning outcomes).	Academic Accreditation & Development and Quality committee
2-2-5	Teaching and learning strategies and assessment methods in the program vary according to its nature and level, and are aligned with the learning outcomes of the program.	Curricula and Courses Development Committee
2-2-6	The program verifies the effectiveness of field training and the quality of its supervision, and follows up on the commitment of its operators to their mandated tasks according to specific mechanisms.	Field Training and Graduate project Committee
2-2-7	The program ensures a unified application of its study plan as well as the program and the course specifications offered at more than one site (sections of male and female students and different branches). *	Curricula and Courses Development Committee
2-3-1	The program monitors the commitment of the teaching staff to the learning and teaching strategies and assessment methods included in the program and course specifications through specific mechanisms. *	Academic Accreditation & Development and Quality committee
2-3-2	The necessary training is provided for the teaching staff on learning and teaching strategies and assessment methods identified in the program and course specifications, along with the effective use of modern and advanced technology; and their use is monitored.	Graduate Studies, Scientific Research & Society services Committee
2-3-3	At the beginning of each course, students are provided with comprehensive information about the course, including learning outcomes, teaching and learning strategies, and assessment methods and dates, as well as what is expected from them during the study of the course and feedback on their performance is provided for them.	Academic Affairs , Advising and Extracurricular Activities Committee
2-3-4	The program applies mechanisms to support and motivate excellence in teaching, and encourages creativity and innovation of the teaching staff.	Graduate Studies, Scientific Research & Society services Committee

2-3-5	The program implements clear and publicized procedures to verify the quality and validity of the assessment methods, and to ensure the level of student achievement.	Curricula and Courses Development Committee
2-3-6	Effective procedures are used to control academic integrity at the program level to verify that the work and assignments of students are their own. *	Academic Affairs, Advising and Extracurricular Activities
3-0-1	The program applies approved and disclosed criteria and requirements for the admission, registration and graduation of students, the transition to another program and the equivalent of what students have previously learned, commensurate with the nature of the program and are applied fairly.	Academic Affairs, Advising and Extracurricular Activities
3-0-2	The program provides basic information to students, such as study requirements, services, and financial fees (if any), through various means.	Academic Affairs, Advising and Extracurricular Activities
3-0-3	Students are provided with effective academic, professional, psychological, and social guidance, and counseling services through qualified and sufficient staff. *	Academic Affairs, Advising and Extracurricular Activities
3-0-4	Mechanisms are applied to identify gifted, creative, talented, and underachieving students in the program, and appropriate programs are available to care for, motivate, and support each group of them.	Academic Affairs, Advising and Extracurricular Activities
3-0-5	Students in the program are offered extracurricular activities in variety of fields to develop their abilities and skills, and the program takes appropriate actions to support and motivate their participation.	Academic Affairs, Advising and Extracurricular Activities
3-0-6	The program implements an effective mechanism to communicate with its alumni and involve them in its events and activities, explore their views, and benefit from their expertise and support; and provides updated and comprehensive databases about them.	Alumni Affairs and Labor Market Needs Committee
3-0-7	Effective mechanisms are applied to evaluate the adequacy and quality of services provided to students and measure their satisfaction with them; and the results are used for improvement. *	Academic Affairs, Advising and Extracurricular Activities
4-0-1	The program has an adequate number of faculty members at all sites where it is offered and appropriate verification mechanisms are applied. *	Graduate Studies, Scientific Research & Society services Committee
4-0-2	The teaching and adjunct staff in the professional programs include some experienced and highly skilled professionals in the field of the program.	Graduate Studies, Scientific Research & Society services Committee

4-0-3	The teaching staff participate in academic, research, and scientific production activities efficiently and regularly, and their participation in these activities is considered one of the criteria for their evaluation and promotion.	Graduate Studies, Scientific Research & Society services Committee
4-0-4	Teaching staff participate in community partnership activities; and their participation in these activities is considered as one of the criteria for their evaluation and promotion.	Graduate Studies, Scientific Research & Society services Committee
4-0-5	Teaching staff participate in professional and academic development programs in accordance with a plan that meets their needs and contributes to the development of their performance.	Graduate Studies, Scientific Research & Society services Committee
4-0-6	The performance of the teaching staff is regularly assessed according to specific and published criteria; feedback is provided to them; and the results are used in improving the performance.	HoD
5-0-1	The program ensure the adequacy and appropriateness of learning sources and services provided in accordance with its needs and student numbers, and updated them periodically.	Learning facilities & Laboratories Committee
5-0-2	The teaching staff, students, and employee of the program have the appropriate orientation and technical training and support for the effective use of resources and means of learning.	Learning facilities & Laboratories Committee
5-0-3	Safety, environmental conservation and hazardous waste disposal standards are applied efficiently and effectively, with all public and occupational health and safety requirements available in facilities and equipment and educational and research activities. *	Learning facilities & Laboratories Committee
5-0-4	The program has the appropriate technologies, services, and environment for courses offered through distance or e-learning according to their own specific standards.	Learning facilities & Laboratories Committee
5-0-5	The program evaluates the effectiveness and efficiency of learning resources, facilities, and equipment of all types; and the results are used for improvement.	Learning facilities & Laboratories Committee

Table 9 Mapping of ABET Criteria to Responsible Committees

Criteria	Responsible Committee
Criterion 1. Students	Academic Affairs, Advising and Extracurricular Activities
Criterion 2. Program Educational Objectives	Academic Accreditation & Development and Quality Committee
Criterion 3. Student Outcomes	Academic Accreditation & Development and Quality Committee
Criterion 4. Continuous Improvement	Academic Accreditation & Development and Quality Committee
Criterion 5. Curriculum	Curricula and Courses Development Committee
Criterion 6. Faculty	Graduate Studies, Scientific Research & Society Services Committee
Criterion 7. Facilities	Learning Facilities & Laboratories Committee
Criterion 8. Institutional Support	Academic Affairs, Advising and Extracurricular Activities
Program Criteria	Academic Accreditation & Development and Quality Committee
Appendix A – Course Syllabi	Curricula and Courses Development Committee
Appendix B – Faculty Vitae	Graduate Studies, Scientific Research & Society Services Committee
Appendix C – Equipment	Learning Facilities & Laboratories Committee
Appendix D – Institutional Summary	Field Training and Graduate Project Committee

Workflow for Evaluation and Improvement Process

This subsection provides a visual representation of the evaluation and improvement process, illustrating how data collection, analysis, and implementation are systematically carried out to ensure continuous improvement in the BSc ME Program. The workflow complements the Annual Review Cycle and Comprehensive Review Cycle by clearly outlining the steps involved in transforming data into actionable improvements. It demonstrates how the program ensures transparency, accountability, and systematic follow-through in its quality assurance processes.

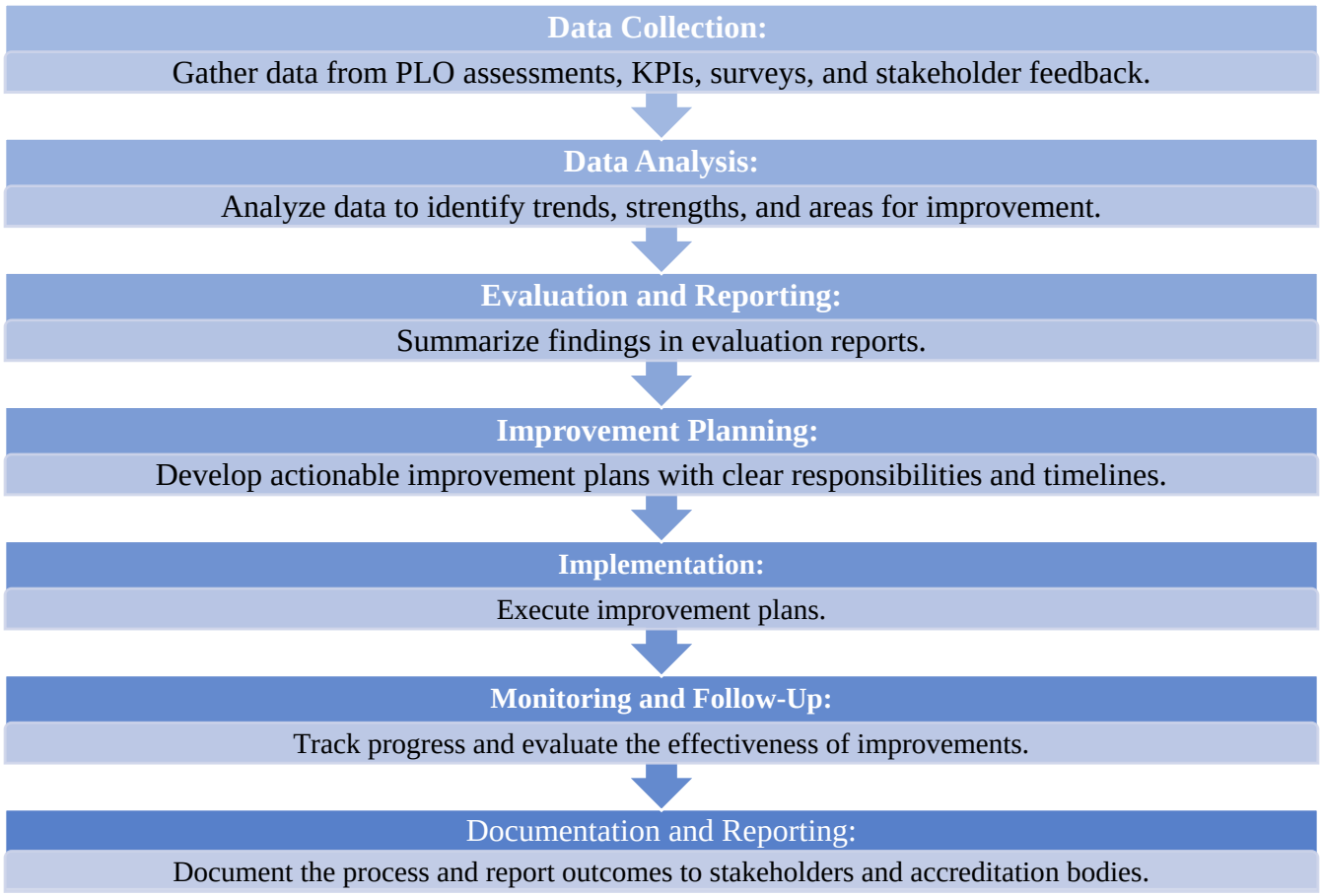

Figure 3 Workflow Diagram

Steps in the Workflow:

1. **Data Collection:**
    - Collect data from PLO assessments, KPIs, surveys (student, faculty, alumni, employer), and feedback from the External Advisory Board Committee.
    - **Evidence:** Survey results, assessment reports, KPI report, meeting minutes.
2. **Data Analysis:**
    - Analyze the collected data to identify trends, strengths, weaknesses, and areas for improvement.
    - **Evidence:** Analysis reports, benchmarking results.
3. **Evaluation and Reporting:**
    - Prepare evaluation reports summarizing the findings and highlighting areas needing attention.
    - **Evidence:** Evaluation reports, annual program reports.
4. **Improvement Planning:**
    - Develop actionable improvement plans based on the evaluation results. Assign responsibilities and set timelines for each action.
    - **Evidence:** Improvement plans, meeting minutes.
5. **Implementation:**
    - Execute the improvement plans, ensuring that all actions are carried out as planned.
    - **Evidence:** Updated curriculum documents, new training programs, revised policies.
6. **Monitoring and Follow-Up:**
    - Track the progress of improvement actions and evaluate their effectiveness.
    - **Evidence:** Progress reports, follow-up meeting minutes, evaluation outcomes.
7. **Documentation and Reporting:**
    - Document the entire process, including evidence of improvements, and report outcomes to stakeholders and accreditation bodies.
    - **Evidence:** Final reports, accreditation documents.

Approval of modifications required by the action plan

The BSc MEP follows a structured process for identifying, evaluating, and approving modifications to the program. Table 10 outlines the different levels of approval required based on the nature of the modification.

Table 11 Approval Level of Modifications

Modifications	Final Level of Approval
Program Level	
Changes including a program's mission, objectives, title, program length (total number of years/levels/ hours), program learning outcomes, program specification, study plan, and adding co-requisites or prerequisites	UT Standing committee of programs and study plans
Changes in ordering of PLOs, program KPIs, course code	UT Management of Programs and study plans
Change in the facilities, operational plan, dropping program co-requisites or pre-requisites	Faculty Council
Course Level	
Changes in the title, credit hours, length of period for teaching, timing in the program plan, update of course specification affecting >25% of CLOs, language of teaching	Standing committee of programs and study plans at UT
Course code	Management of Programs and study plans at UT.
Changes in course policies and regulations	Faculty Council
Course teaching strategies, <25% change in CLOs, textbooks, reference materials, updates in medical knowledge in related topics, distribution of topics/weeks, methods for assessment; measurement and evaluation grading systems.	Department Council

4.8 Communication of Quality Assurance Activities

Effective communication of quality assurance activities is essential for:

- **Maintaining transparency and fostering a culture of continuous improvement** within the BSc Mechanical Engineering program. This involves regularly sharing key findings from quality assurance reports, such as Annual Program Reports (APRs), PLO Assessment Reports, and KPI Analysis Reports, with all relevant stakeholders, including faculty, students, and administrative staff.
- **Establishing feedback mechanisms** to allow stakeholders to provide input on the quality assurance process and suggest improvements. This open line of communication not only enhances awareness but also encourages active participation in upholding and advancing the program's quality standards.
- **Organizing regular workshops, meetings, and newsletters** as effective channels for sharing updates and engaging the program community in quality assurance initiatives.

5. Detailed Procedures for Quality Management System

In this section, we detail the procedures and processes that govern the development, modification, assessment, and continuous improvement of the core components of the BSc ME program. Each subsection will outline the specific procedures, roles, responsibilities, and mechanisms for feedback and review, adhering to the principles of the PDCA (Plan-Do-Check-Act) cycle. This structured approach facilitates continuous improvement and ensures "closing the loop" in quality assurance. It ensures alignment with the institution's mission and strategic goals, compliance with accreditation standards, and responsiveness to stakeholder needs, fostering a culture of continuous improvement within the BSc ME program.

5.1 Mission and Goal Development and Modification

Objective:
To establish a clear and concise mission statement and set of goals that reflect the program's purpose, direction, and aspirations.

Procedure:

1.Initial Planning and Research:

- Conduct a situational analysis to understand the current state of the BSc ME program and the external environment.
- Review the UT mission and strategic objectives to ensure alignment.
- Engage stakeholders, including faculty, students, employers, and alumni, through surveys, focus groups, and consultations to gather input and expectations.
- Review and analyze recommendations and observations from accreditation bodies related to the mission and goals during the comprehensive review cycle, ensuring alignment with quality standards and continuous improvement.

2. Drafting the Mission Statement and Goals:

- Building on the outcomes of the initial planning phase, the Academic Accreditation & Development and Quality committee should draft the program's mission and goals.
- Ensure that the mission statement is concise, clear, consistent with the UT mission, and reflects the program's attributes and contributions to the field of Mechanical Engineering.
- Develop goals that are specific, achievable, relevant, and aligned with the BSc MEP mission and UT goals.

3. Review and Approval:

- Present the draft mission statement and goals to the Program External Advisory Board, stakeholders, and relevant committees for feedback.
- Revise the mission and goals based on feedback and resubmit them for approval by the ME Department Council, FoE Council, and UT Programs and Study Plans Committee.

4. Implementation and Communication:

- Integrate the approved mission and goals into all program documentation, promotional materials, and strategic planning activities such as Program Specifications, Operational Plan, and Manuals and Handbooks.
- Communicate the mission and goals to all stakeholders.

5. Ongoing Review and Modification:

- Conduct periodic reviews, at least every five years, to assess the mission and goals' continued relevance and alignment with external demands and institutional priorities.
- Implement changes as necessary, following the same consultative process to ensure stakeholder engagement and approval.

5.2 Program Learning Outcomes Development and Modification

Objective:

Define and continuously update program learning outcomes (PLOs) that specify the Knowledge and understanding, skills, and Values, Autonomy, and Responsibility students should acquire by the end of the program.

Procedure:

1. **Benchmarking and Research:**
   - Conduct a thorough analysis of existing PLOs against program mission, Graduate Attributes of UT, national qualifications frameworks (NQF), The specialized academic standards under the title "Key Learning Outcomes", international accreditation standards (ABET), national accreditation standards (NCAAA), and industry expectations.
   - Review similar programs at peer institutions to identify best practices and innovative approaches.
   - Gather input from employers, alumni, faculty, and students to ensure outcomes meet labor market needs.
   - Review and analyze recommendations and observations from accreditation bodies related to the PLOs during the BSc ME program comprehensive review cycle, ensuring alignment with quality standards and continuous improvement.

2. **Development of Learning Outcomes:**
   - Building upon the outcomes of the Benchmarking and Research phase, the Academic Accreditation & Development and Quality committee should commence drafting a set of learning outcomes that are comprehensive, measurable, and aligned with the program's mission and goals.
   - Ensure outcomes cover the three learning domains: Knowledge and understanding, skills, and Values, Autonomy, and Responsibility.

3. **Validation and Alignment:**
   - Map the proposed PLOs to program mission and goals.
   - Map the proposed PLOs to the UT graduate attributes.
   - Ensure alignment with **NQF** and the specialized academic standards, developed by the **Education and Training Evaluation Commission** (ETEC) under the title "Key Learning Outcomes".
   - Ensure Alignment with **ABET** standards.

- Conduct workshops with faculty and industry partners to validate the outcomes and ensure alignment with labor market.
- Revise outcomes based on feedback and finalize them for approval.

4. Curriculum Modification Based on PLOs:

- Identify Curriculum Changes: Evaluate the existing curriculum to identify necessary changes that align with the newly developed or modified PLOs.
- Update Course Content: Ensure that course content, activities, and assessments reflect the updated PLOs, incorporating relevant topics and skills.
- Align Courses with PLOs: Revise course learning outcomes (CLOs) to ensure consistency with the updated PLOs, ensuring each course contributes effectively to the program's overall educational objectives.
- The Curriculum Modification Procedure should be followed to complete this step.

5. Approval and Dissemination:

- Present the PLOs to the Program External Advisory Board and relevant committees and councils for formal approval.
- Integrate the approved PLOs into all program documentation, promotional materials, and strategic planning activities such as Program Specifications, PLO-CLO mapping matrix, PLO Assessment Framework and Plan, and Manuals and Handbooks.
- Communicate the mission and goals to all stakeholders.

6. Reviewing and Continuous Improvement:

- Establish a schedule for periodic review and revision of PLOs to ensure they remain relevant and aligned with industry needs.
- Engage in regular dialogue with stakeholders to collect ongoing feedback and ensure that the PLOs continue to reflect the evolving educational and professional landscape.

Feedback Mechanisms:

- Employer and alumni surveys
- External Advisory Board consultations
- Faculty workshops and meetings
- Stakeholder feedback sessions
- Accreditation Bodies During Program Comprehensive Revision

7. Review and Updating of PLO Threshold Values

The review and updating of PLO threshold values is an integral part of the program's continuous quality assurance and improvement process. This process ensures that the defined benchmarks for student attainment remain relevant, achievable, and aligned with institutional goals, national qualification frameworks (e.g., NQF), and evolving stakeholder expectations.
The revision process typically follows these steps:

1. **Data-Driven Assessment Review**: At the end of each academic year, the results of direct and indirect assessment tools (e.g., course reports, capstone evaluations, student and

alumni surveys, and employer feedback) are analyzed to determine the actual attainment levels of each PLO.

2. **Benchmark Performance Comparison**: The actual attainment percentages are compared to the current threshold values identify consistent over- or underperformance trends.
3. **Stakeholder Consultation**: Input is gathered from key stakeholders, including faculty members, program advisory boards, and employers, to evaluate whether the existing thresholds are appropriately challenging and reflective of expected graduate competencies.
4. **Academic Committee Review**: The results and stakeholder feedback are presented to the Academic accreditation, development and Quality committee. The committee critically reviews the findings and recommends whether thresholds should be maintained, raised, or adjusted.
5. **Justification and Documentation**: Any proposed change to threshold values must be supported by clear evidence from assessment data and stakeholder input. Rationale for revisions is documented and submitted for approval through the formal institutional governance process.
6. **Approval and Implementation**: Once approved, the revised threshold values are communicated to all relevant faculty. The updated benchmarks are applied in subsequent assessment cycles, and their impact is monitored continuously.
7. **Periodic Review**: Even in the absence of major performance issues, threshold values are subject to periodic review (typically every 2–3 years) to ensure they remain aligned with national standards, accreditation requirements, and global best practices in engineering education.

5.3 Program Study Plan Development and Modification

Objective:

Design and continuously update a coherent and comprehensive study plan that aligns with the program's mission, goals, learning outcomes, and the educational, scientific, technical and professional developments in the field of Mechanical Engineering.

Procedure:

1. Curriculum Benchmarking and Research:

- Conduct a curriculum mapping exercise to align existing courses with program learning outcomes and identify gaps or redundancies.
- Conduct a thorough analysis of existing Curriculum against
  - Program goals

- National qualifications frameworks (NQF) requirements, especially, those related to required credit and contact hours of the program.
- Curriculum General Criteria (Essential Knowledge Units (EKU), General Knowledge Units (GKU), and Specialized Knowledge Units (SKU) developed by ETEC under the title "Key Learning Outcomes".
- Program Criteria requirements of the International accreditation standards (ABET)
- National accreditation standards (NCAAA) Requirements.
- Other educational, scientific, technical, and professional developments in the field of ME.
- Industry expectations.

- Review similar programs at peer institutions to identify best practices and innovative approaches.
- Review and analyze recommendations and observations from accreditation bodies related to the Curriculum during the BSc ME program comprehensive review cycle, ensuring alignment with quality standards and continuous improvement.
- Review and analyze comments, recommendations, and suggestions provided by the UT Programs and Study Plan Committee.
- Review the emerging technologies to ensure relevance and competitiveness.
- Gather input from faculty, industry partners, alumni, and students on potential areas for curriculum enhancement.

2. Study Plan Design:

- The UT Program and Study Plan Committee develops the part of BSc ME program study plan related to university requirements.
- The FoE Program and Study Plan Committee develops the part of BSc ME program study plan related to FoE requirements.
- The BSc ME program start drafting the study plan considering the following:
  - Outcomes of phase 1: Curriculum Benchmarking and Research
  - That balances foundational knowledge, advanced topics, and practical skills.
  - The balance between the general and specialty requirements.
  - The balance between theoretical and applied aspects.
  - The sequencing and integration of the courses in setting Prerequisites and Corequisites.
  - Guidelines and regulations set by the UT.
  - Determine the core courses, prerequisites, and elective options based on the program's objectives and the needs of the students.
  - Explore opportunities for specialization or concentration areas within the study plan.
  - The inclusion of experiential learning opportunities, such as internships, projects, and lab work.

3. Review and Validation:

- Present the draft study plan to the Program External Advisory Board, BSc ME program committees, FoE Program and Study Plan Committee, UT Program and Study Plan Committee, and ME Faculty members for feedback and alignment with standards and regulations.

- Revise the study plan based on feedback and finalize it for approval.

4. Approval and Communications

- The program adheres to the procedural guidelines outlined in the Program and Study Plan Procedural Guide developed by the UT Program and Study Plan Committee.
- The program complies with the authority framework established by the UT Program and Study Plan Committee.
- Submit the study plan for formal approval by the institution's academic council or relevant authority.
- Communicate the approved plan to faculty, students, and stakeholders through orientation sessions, handbooks, and digital platforms.

Feedback Mechanisms:

- Curriculum workshops and focus groups.
- External Advisory Board meetings.
- Student course feedback and stakeholders' surveys.
- Accreditation Bodies During Program Comprehensive Revision

5.4 Course Learning Outcomes Development and Modification

Objective:

Develop and modify Course Learning Outcomes (CLOs) to ensure they are clear, measurable, aligned with Program Learning Outcomes (PLOs), and responsive to industry trends and academic standards.

Procedure:

1. Initial Planning and Research

- The Curricula and Courses Development Committee conducts a workshop to train faculty members on establishing CLOs, emphasizing Bloom's Taxonomy, measurability, and the distinction of learning domains for each CLO.
- The Mechanical Engineering (ME) Department conducts workshops to engage faculty in discussions about course objectives, content, and alignment with program learning outcomes.
- Relevant committees review the following aspects for courses related to their specialization:
  - Program Study Plan.
  - The program mission, goals, and PLOs.
  - Check alignment with the National Qualifications Framework and the specialized academic standards developed by ETEC under the title "Key Learning Outcomes."

- Review the Essential Knowledge Units (EKU), General Knowledge Units (GKU), and Specialized Knowledge Units (SKU) developed by ETEC under the title "Key Learning Outcomes."
- Ensure consistency with ABET accreditation standards.
- Consider the program's target audience, including students' backgrounds, prior knowledge, and intended career paths.
- Compare against national and international programs to identify best practices.
- Utilize the Procedural Guide developed by the UT Program and Study Plan Committee.
- Incorporate new educational, scientific, technical, and professional developments in the field of ME.

2. Drafting Course Learning Outcomes

- Courses are distributed among faculty members based on their specialization to leverage expertise and ensure focused development.
- Faculty members draft CLOs for each course, ensuring clarity, measurability, and alignment with PLOs. They specify the corresponding PLO and learning domain for each CLO.
- Faculty members propose teaching strategies and assessment methods tailored to the CLOs, considering innovative and effective pedagogical approaches.
- The Academic Affairs, Advising, and Extracurricular Activities Committee conduct workshops to discuss the drafted CLOs and make necessary adjustments for improvement. Consideration is given to the sequencing and integration of courses to ensure a coherent curriculum.

3. Review and Alignment

- The BSc MEP Curricula and Courses Development Committee reviews all course CLOs to ensure consistency, coherence, and alignment with overall program goals.
- Based on the drafted CLOs, the committee establishes a mapping matrix between BSc MEP courses and PLOs. This ensures that PLOs are sufficiently covered in the curriculum and identifies any gaps or overlaps that need addressing.
- The Faculty of Engineering (FoE) and UT Program and Study Plan Committees conduct a thorough review of course specifications during the revision process to ensure compliance with institutional standards.

4. Finalization, Approval, and Documentation

- The Academic Affairs, Advising, and Extracurricular Activities Committee review and analyze comments received from Program Curricula and Courses Development Committee, FoE, and UT program and study plan committees, making necessary changes to prepare the final version of the CLOs.
- The revised CLOs and alignment matrices are submitted to the department and faculty councils for approval. Subsequently, they are forwarded to the UT's Standing Committee for Programs and Study Plans for final approval.
- An audit report from the UT's Standing Committee for Programs and Study Plans is submitted to the program for further refinement, ensuring continuous quality improvement.

- Approved outcomes are documented in course syllabi, Course Specifications, handbooks, and online platforms, ensuring accessibility for students and stakeholders.

5. Assessment and Revision

- Implement regular assessments of CLO achievement through exams, assignments, projects, and other evaluation methods to gauge effectiveness and alignment with PLOs.
- Collect and analyze assessment data to identify areas for improvement. This data-driven approach helps in refining teaching methods and course content.
- Course instructors prepare assessment results, analysis, and actions for improvement, which are documented in course reports.
- Engage in ongoing dialogue with faculty and industry partners to refine and enhance CLOs based on assessment results and evolving industry trends, ensuring that the program remains responsive to changes in the educational and professional landscape.

Feedback Mechanisms:

- Course evaluations and student feedback
- Assessment data analysis of CLOs and PLOs
- Faculty and industry consultations
- Accreditation Bodies During Program Comprehensive Revision

5.5 Teaching Strategies and Assessment of Students' Learning Policies establishment

Objective

To establish a framework for developing and implementing effective teaching strategies and students learning assessment methods in the BSc Mechanical Engineering program, aligned with the program's mission, goals, and learning outcomes.

Responsibilities

- Academic Affairs, Advising, and Extracurricular Activities Committee: Develop and review teaching and assessment policies.
- Course Coordinators: Implement and monitor strategies at the course level.
- Teaching Staff: Deliver courses following policies and provide feedback.
- Academic Accreditation & Development and Quality committee (QAC): Oversee policy effectiveness and compliance.

Procedure

1. Initial Planning and Research

- Research Best Practices: Study effective teaching and assessment methods in Mechanical Engineering, considering academic literature and industry feedback.

- Identify Needs: Analyze current methods to identify gaps and improvements aligned with Program Learning Outcomes (PLOs).

2. Policy Development

- Draft Policies: Academic Affairs, Advising, and Extracurricular Activities Committee drafts policies for teaching strategies and assessment methods aligned with standards like ABET and NCAAA utilizing the discussion occurred during establishing CLOs.
- Stakeholder Consultation: Gather input from faculty, students, and industry to refine policies.
- Integration: Align teaching strategies and assessments with course learning outcomes (CLOs) and PLOs.
- Review and Approval: QAC reviews policies, which are then approved by departmental councils.

3. Implementation

- Faculty Training: Conduct workshops for faculty on new strategies and assessments.
- Implementation: Roll out approved policies across the BSc ME program, monitoring adherence through audits.

4. Monitoring and Evaluation

- Data Collection: Collect data on student performance and feedback to assess policy effectiveness.
- Continuous Improvement: Update policies based on analysis and feedback.

5.6 Course Specifications Development and Modification

Objective:
To establish a clear process for developing and modifying course specifications in the BSc Mechanical Engineering (ME) program, ensuring alignment with program learning outcomes, industry standards, and accreditation requirements.

Procedure:

1. Initial Planning and Research

- The Curricula and Courses Development Committee conducts a workshop to train faculty members on establishing Course Specifications.
- The Mechanical Engineering (ME) Department conducts workshops to engage faculty in discussions about course objectives, content, and alignment with program learning outcomes.
- Relevant committees review the following aspects for courses related to their specialization:

- Program Study Plan.
- The program mission, goals, and PLOs.
- Check alignment with the National Qualifications Framework and the specialized academic standards developed by ETEC under the title "Key Learning Outcomes."
- Review the Essential Knowledge Units (EKU), General Knowledge Units (GKU), and Specialized Knowledge Units (SKU) developed by ETEC under the title "Key Learning Outcomes."
- Ensure consistency with ABET accreditation standards.
- Consider the program's target audience, including students' backgrounds, prior knowledge, and intended career paths.
- Compare against national and international programs to identify best practices.
- Utilize the Procedural Guide developed by the UT Program and Study Plan Committee.
- Incorporate new educational, scientific, technical, and professional developments in the field of ME.

2. Drafting Course Specifications

- Courses are distributed among faculty members based on their specialization to leverage expertise and ensure focused development.
- Faculty members draft Course Specifications after reviewing the following:
  - The program's mission and objective
  - Program specification.
  - Study plan of the program
  - Program Learning Outcomes
  - Course Learning Outcomes
  - Policies for Teaching Strategies and Assessment Methods
- Academic Accreditation & Development and Quality Committee conduct workshops to discuss the drafted Course Specifications and make necessary adjustments for improvement. Consideration is given to the sequencing and integration of courses to ensure a coherent curriculum.

3. Review and Alignment

- The BSc MEP Program and Academic Affairs, Advising, and Extracurricular Activities Committee reviews all course Specifications to ensure consistency, coherence, and alignment with overall program goals.
- The Faculty of Engineering (FoE) and UT Program and Study Plan Committees conduct a thorough review of course specifications during the revision process to ensure compliance with institutional standards.

4. Finalization, Approval, and Implementation

- The Academic Accreditation & Development and Quality Committee review and analyze comments received from Program, FoE, and UT program and study plan committees, making necessary changes to prepare the final version of the Course Specifications.

- An audit report from the UT's Standing Committee for Programs and Study Plans is submitted to the program for further refinement, ensuring continuous quality improvement.
- Integrate the approved course specifications into the curriculum, ensuring all faculty adhere to the outlined objectives and strategies.

Feedback Mechanisms:

- Course evaluations and student feedback
- Assessment data analysis of CLOs and PLOs
- Faculty and industry consultations
- Accreditation Bodies During Program Comprehensive Revision

5.7 Program Learning Outcomes Assessment

The BSc MEP has developed a comprehensive document titled the PLO Assessment Framework, dedicated to the assessment of Program Learning Outcomes (PLOs). This document provides an in-depth exploration of the program's systematic approach to assessing and enhancing program learning outcomes. The following description offers a concise overview of the BSc MEP's PLO assessment strategy, highlighting its commitment to delivering quality education and fostering continuous improvement.

Concise Overview and Key Elements of the BSc MEP PLOs Assessment Framework:

1. Aligning ABET Student Outcomes with NCAAA PLOs:

- The NCAAA PLOs codes are mapped to the corresponding ABET SOs codes.
- This mapping is used to avoid redundancy and sometimes to utilize ABET-related terminology.

2. Aligning BSc MEP Courses with PLOs:

- Defines Course Learning Outcomes (CLOs) aligning with PLOs.
- Transparent documentation in course specifications.

3. Categorization of PLOs to Technical and Professional Outcomes:

- Divides PLOs into technical and professional sets, mostly, because distinction in the direct assessment methods.
- Technical outcomes assessed using CLOs-based assessment through coursework.
- Professional outcomes are assessed using performance indicators and rubrics through Senior Design Projects (SDPs).
- Framework Guarantees a detailed evaluation of both technical and professional skills.

4. Assessment Plan:

- The Guiding principles of the assessment process include focus on PLOs, multiple evaluation methods, faculty involvement, transparency, and continuous improvement.
- Direct and indirect assessment methods ensure a comprehensive understanding of PLO attainment.

- Involvement of instructors, SDP advisors, and the relevant committees.

5. Expected Level of Attainment of PLOs:

- Student performance is categorized into five levels ranging from 5 to 1 with 5 corresponding to satisfactory.
- Percentage of students whose performance in a specific PLO or PI is in the 4^{th} and 5^{th} levels represent the actual attainment level.
- Target attainment level is updated according to the assessment results.

6. Detailed Procedure for Collecting Assessment Data:

- Divides PLOs into technical and professional outcomes.
- Uses direct assessment (CLOs-based and rubrics) and indirect assessment (exit surveys).
- Specific sampling methods for each assessment type.
- Detailed steps and tools for data collection, including controlled environment questions, rubrics, and assessment forms.

5.8 Exam Management and Grading

The Vice Dean for Academic Affairs, Head of the Mechanical Engineering Department, Academic Affairs Coordinator (Registrar), and Academic Affairs and Quality Committees are responsible for the following:

- Establish exam policies, procedures, and guidelines to ensure fairness, security, and integrity.
- Set rules on academic integrity, exam conduct, and resource usage during exams.
- Communicate exam policies and procedures clearly to faculty and students.
- Work with faculty and administrators to develop exam schedules and timelines, ensuring they are communicated effectively.
- Provide students and faculty with information about exam dates, times, and venues.
- Coordinate with relevant departments to secure necessary resources and facilities for exams.
- Develop guidelines for accommodating students with special needs or disabilities during exams.
- Oversee exam venues to maintain a secure and controlled environment, minimizing the risk of cheating or misconduct.
- Address issues or irregularities that may arise during exams, such as student concerns or technical difficulties.

Exam Process

1. The Vice Dean for Academic Affairs sends the exam blueprint to course coordinators and instructors before the exam period.
2. For courses with multiple sections and instructors, course coordinators hold meetings with instructors to determine the exam format, duration, number of questions, weightage, and any specific rules. They also select exam questions that align with the exam blueprint, course content, and learning outcomes, considering difficulty level and cognitive skills to be assessed.

3. After the primary grader completes grading, a sample of graded exams is cross-checked by peers. The cross-checker verifies the accuracy and consistency of the primary grader's assessments. The primary grader and cross-checker discuss and resolve any discrepancies, consulting with the course coordinator or subject matter experts if needed.
4. The course instructor prepares a grade distribution Excel file that provides an analytical overview of student grades.
5. Finalized student grades are entered into the e-register system. The Head of the Department reviews the entered data and the Excel file for approval.
6. Final results are approved by the Vice Dean, and grades are released to students via their UT student accounts.
7. If a student wishes to dispute a grade, they submit a formal request for a grading revision to the department. The Head of the Department assigns an independent review committee to objectively assess the complaint. If necessary, the committee consults with the original grader or instructor regarding the grading decision.
8. The student's request and the reviewer's report are communicated to the Head of the Department. If the complaint is deemed valid, the Head contacts the primary grader to adjust the grade in the e-register accordingly. If the original grading decision is upheld, a detailed explanation is provided to the student, addressing their concerns.
9. After exams, the Academic Affairs, Advising, and Extracurricular Activities Committee identifies areas for improvement in exam design, content, or administration and makes necessary adjustments for future exams or courses.

5.9 Key Performance Indicators (KPIs) Analysis

Introduction

Key Performance Indicators (KPIs) are essential tools for assessing the quality and performance of BSc ME programs. They play a crucial role in continuous development and informed decision-making. The National Center for Academic Accreditation and Evaluation (NCAAA) has identified 11 core KPIs that align with the Program Accreditation Standards and must be regularly measured by the program. Additional performance indicators related to the operational plan OPPIs are utilized to ensure program quality.

Each KPI must be measured using appropriate tools such as surveys and statistical data, considering the following benchmarks:

- Actual Performance
- Targeted Performance Level
- Internal Benchmark (Internal Reference)
- External Benchmark (External Reference)
- New Target Performance Level

A detailed report is required to analyze the results of each indicator, focusing on performance changes, comparisons by site and gender, strengths, and areas needing improvement.

Procedure:

 Committee Roles and Responsibilities: The Academic Accreditation & Development and Quality committee is responsible for the annual KPIs analysis report, potentially collaborating with other relevant committees. It is essential to ensure that all stakeholders involved in the analysis and reporting process properly understand the KPIs.

 Collection of Data: Gather data for each KPI using tools such as surveys, statistical data, and institutional records. Ensure data integrity and accuracy by verifying sources and applying consistent data collection methodologies.

 Benchmarking: Analyze each KPI against internal and external benchmarks, determining actual performance levels, targeted performance levels, and deviations from expected outcomes.

 Data Analysis and Reporting: Assess performance against each KPI by analyzing the data. Identify strengths and areas needing improvement, noting any significant performance changes. Prepare a detailed analysis report highlighting trends, potential causes of deviation, and opportunities for improvement.

 Collaboration and Feedback: Engage with the ME department and committees to gather insights and feedback on KPI performance. Conduct meetings to discuss findings, gather inputs, and collaboratively identify action plans for improvement.

 Preparation of KPI Analysis Report: Compile the analysis findings into an annual KPI analysis report, ensuring clarity, accuracy, and comprehensiveness. Include detailed sections on performance indicators, benchmarking results, identified issues, and recommended actions.

 Integration into Annual Program Report: Integrate the KPI analysis report into the Annual Program Report. Use insights from the analysis to inform strategic planning, policy formulation, and continuous improvement initiatives.

 Development of Improvement Plan: Utilize findings from the KPI analysis to develop a targeted improvement plan. Set realistic and achievable goals for enhancement based on identified weaknesses and opportunities.

 Review and Approval: Submit the KPI analysis report and improvement plan for review by the Head of the Mechanical Engineering Department and other relevant stakeholders. Obtain necessary approvals and finalize the documents for dissemination.

 Dissemination and Implementation: Share the approved KPI analysis report and improvement plan with faculty, staff, and other stakeholders. Implement the improvement strategies and monitor progress periodically to ensure desired outcomes are achieved.

 Continuous Monitoring and Evaluation: Continuously monitor the performance indicators throughout the year. Conduct periodic evaluations to assess the effectiveness of implemented improvement strategies and make necessary adjustments.

Key Performance Indicators for BSc ME Program (2024) :

KPI-P-01: Overall rating of final-year students on the quality of the learning experience.
KPI-P-02: Students' evaluation of course quality.
KPI-P-03: Completion rate of students within the minimum time.
KPI-P-04: Retention rate of first-year undergraduate students.
KPI-P-05: Students' performance in professional and national examinations.

Graduate Outcomes:

KPI-P-06: Graduates' employability and enrolment in postgraduate programs.
KPI-P-07: Employers' evaluation of graduates' proficiency.

Teaching Staff and Research:

KPI-P-08: Ratio of students to teaching staff.
KPI-P-09: Percentage of faculty with publications.
KPI-P-10: Rate of published research per faculty member.
KPI-P-11: Citations rate in refereed journals per faculty member.

Table 12 Mapping of the ME Program's Goals and operational plan OPPIs to the Responsible Committees

ME Program's Goals	Initiatives	Operational Goal	KPIs	Responsibility
PG1: Deliver distinguished academic education	Enhance the Curriculum Plan and the Learning Outcomes to meet the job market's needs.	Involvement of the stakeholders (Alumni and Employers) in the development of the curriculum and learning outcomes	PG1.1 Scale of Evaluation of the Program Curriculum and Learning Outcomes by the stakeholders Survey. (KPI-MEP-1)	Curricula and Courses Development Committee
	Encouraging students to prepare for and participate in professional and/or national examinations	Students' performance in the professional and/or national examinations.	PG1.2 Percentage of Students' performance in the professional and/or national examination (KPI-MEP-2)	Academic Affairs, Advising, and Extracurricular Activities
	Improving the employability of graduates	Graduates' employability and enrolment in postgraduate programs	PG1.3 Percentage of Graduates' employability and enrolment in postgraduate programs (KPI-MEP-3)	Alumni Affairs and Labor Market Needs Committee
		Professional Training to improve the communication skills and proficiency of students	PG1.4 Employers' evaluation of the program graduate proficiency (KPI-MEP-4)	Alumni Affairs and Labor Market Needs Committee

PG2: Providing creative research to contribute to building the knowledge economy.	Encouraging faculty for joint research collaborations and publications	Encouraging faculty for research collaborations and publications	PG2.1 Percentage of publications of faculty members (KPI-MEP-5)	Graduate Studies, Scientific Research & Society Services Committee
	Encouraging faculty for joint research collaborations and publications	Encouraging faculty for research collaborations and publications	PG2.2 Rate of published research per faculty member (KPI-MEP-6)	Graduate Studies, Scientific Research & Society Services Committee
	Encouraging faculty to publicize their published research on open-source research platforms	Encouraging faculty to publicize their published research platforms, such as Google Scholar and ResearchGate	PG2.3 Citations rate in refereed journals per faculty member (KPI-MEP-7)	Graduate Studies, Scientific Research & Society Services Committee
	Encouraging faculty to submit patent applications	Encouraging faculty to submit patent applications	PG2.4 Number of patent proposals and applications submitted by the program in a calendar year. (KPI-MEP-8)	Graduate Studies, Scientific Research & Society Services Committee
	Encouraging faculty to apply for research projects and grants	Encouraging faculty to apply for research projects and grants	PG2.5 Number of research projects and grants applied by the program in a calendar year. (KPI-MEP-9)	Graduate Studies, Scientific Research & Society Services Committee

PG3: Effective contribution to sustainable development and community service.	Sustainable development initiatives involve saving paper, energy, and other resources	Encourage paperless communication in administrative work and teaching	PG3.1 Number of Awareness sessions arranged for sustainable practices in an academic year. (KPI-MEP-10)	Field Training and Graduate Project Committee
	Organize Community service sessions organized by the program	Organize community service activities	PG3.2 Number of community service sessions organized by the program. (KPI-MEP-11)	Graduate Studies, Scientific Research & Society Services Committee
PG4: Offer a stimulating and attractive educational environment.	Provide an attractive and adequate learning environment, facilities, and resources to the students	Students' Evaluation of the quality of learning experience in the program	PG4.1 Students' Evaluation of the quality of learning experience in the program (KPI-MEP-12)	Academic Accreditation & Development and Quality Committee
	Provide an attractive and adequate learning environment, facilities, and resources to the students.	Students' evaluation of the quality of the courses	PG4.2 Students' evaluation of the quality of the courses (KPI-MEP-13)	Course Instructors
	Provide an attractive and adequate learning environment, facilities, and resources to the students.	Average number of students in class	PG4.3 Average number of students in class (KPI-MEP-14)	Academic Affairs, Advising, and Extracurricular Activities
	Provide an attractive and adequate learning environment, facilities, and resources to the students.	Student satisfaction with the service provided	PG4.4 Student satisfaction rate with the service provided (KPI-MEP-15)	Learning Facilities & Laboratories Committee

PG5: Provide efficient operational management and a supportive academic environment	Efficient operational management and academic Support	Students Completion Rate	PG5.1 Completion rate (KPI-MEP-16)	Academic Affairs, Advising, and Extracurricular Activities
	Efficient operational management and academic Support	First-year students' retention rate	PG5.2 First-year students' retention rate (KPI-MEP-17)	Academic Affairs, Advising, and Extracurricular Activities
	Efficient operational management and academic Support	The ratio of students to teaching staff	PG5.3 Ratio of students to teaching staff. (KPI-MEP-18)	Academic Accreditation & Development and Quality Committee
	Efficient operational management and academic Support	The percentage of faculty distribution	PG5.4 The percentage of faculty distribution (KPI-MEP-19)	Academic Affairs, Advising, and Extracurricular Activities
	Efficient operational management and academic Support	The percentage of faculty who drop out of the program	PG5.5 The percentage of faculty dropouts from the program (KPI-MEP-20)	Academic Affairs, Advising, and Extracurricular Activities
	Efficient operational management and academic Support	Percentage of beneficiaries from learning resources	PG5.6 Percentage of beneficiaries from learning resources (KPI-MEP-21)	Academic Affairs, Advising, and Extracurricular Activities
	Efficient operational management and academic Support	The percentage of achieved indicators of the objectives of the program's operational plan	PG5.7 The percentage of achieved indicators of the objectives of the program operational plan (KPI-MEP-22)	Academic Accreditation & Development and Quality Committee

5.10 Operational Plan Development and Monitoring

Guided by its mission, the BSc in Mechanical Engineering program establishes an annual operational plan to systematically achieve its goals. This plan outlines specific performance indicators and actionable steps aimed at driving continuous improvement and ensuring the program's success.

Objective:
The objective of this procedure is to outline the steps involved in preparing the BSc in Mechanical Engineering (BSc ME) program's operational plan. This plan ensures alignment with the program's mission and goals through specific initiatives, performance indicators, and actions.

Responsibilities

The Operational Plan Coordinator, who is the Head of the ME Department, is responsible for developing, executing, and monitoring the operational plan.

Procedure:

1. **Initial Planning and Coordination**
   - Review the program's mission and goals to identify key focus areas, such as educational enhancement, social responsibility, and economic contribution.
   - Analyze previous operational plans and performance reports. Gather input from faculty, students, and stakeholders to identify areas for improvement.

2. **Development of the Operational Plan**
   - Based on the previous operational plan and program goals, the operational plan coordinator identifies the relevant committees.
   - Collaborate with program committees to propose initiatives aligned with program goals.
   - Define specific operational goals for achieving these initiatives.
   - Develop KPIs to measure progress and performance.
   - Outline initiatives, operational goals, and KPIs in the draft plan.
   - Distribute the draft plan to committee members and stakeholders for feedback.
   - Conduct a review meeting to discuss feedback and make necessary adjustments.

3. **Approval and Implementation**
   - Present the finalized operational plan to the Head of the Department and relevant authorities for approval.
   - Disseminate the approved plan to all stakeholders, including faculty, students, and administrative staff.
   - Clearly communicate roles and responsibilities related to the plan's implementation.
   - Assign tasks and responsibilities to relevant committees and individuals.
   - Monitor the implementation of initiatives and track progress against KPIs.

4. **Monitoring and Evaluation**
    - Hold monthly meetings for the operational plan committee to discuss progress, challenges, and adjustments.
    - Document meeting minutes, including action items and responsibilities.
    - Analyze data related to each KPI to assess performance.
    - Identify trends, strengths, and areas for improvement.
    - Create end-of-semester and annual reports summarizing activities, achievements, challenges, and future plans.
    - Develop a comprehensive follow-up report to track initiative implementation and KPI evaluation.
    - Utilizing an electronic system to monitor the Operational Plan Performance Indicators and NCAAA KPIs.

5. **Continuous Improvement**
    - Based on evaluation reports, identify specific areas for improvement in the operational plan.
    - Formulate action plans to address these areas, ensuring alignment with program goals.
    - Revise the operational plan as needed based on feedback, performance assessments, and changing external factors.
    - Develop an annual plan outlining responsibilities and initiatives for the upcoming year.

Documentation and Reporting

- Annual Operational Plan: A comprehensive document outlining initiatives, goals, and KPIs.
- Monthly Meeting Minutes: Records of discussions, decisions, and responsibilities from committee meetings.
- End of Semester Reports: Summaries of activities, achievements, and challenges.
- Comprehensive Follow-up Report: Detailed tracking of initiatives and KPI evaluation.
- Improvement Plans: Action plans for addressing areas needing enhancement.

5.11 Surveys Development, Administration, and Analysis

This section outlines the framework for developing, conducting, and analyzing surveys to collect feedback from stakeholders, ensuring continuous improvement in alignment with accreditation requirements and program goals.

While the Academic Accreditation & Development and Quality committee is responsible for conducting and analyzing surveys and identifying areas needing improvement, it is essential for the committee to collaborate with other relevant BSc MEP committees to finalize proposed actions, implement them, and track their effectiveness.

Required Surveys

To fulfill accreditation requirements and support program development, the BSc in Mechanical Engineering program conducts various surveys among key stakeholders, including students, alumni, employers, teaching staff, and employees. These surveys are essential for gathering

insights into program performance, stakeholder satisfaction, and areas for enhancement. Below is an overview of the required surveys and how they align with specific reports.

Table 13 Survey Categories and Reports

Report Name	Survey	Related Section	Additional Comments
Surveys Analysis Report:(Stakeholders' Surveys)	Students (CES + PES or SES)	Eligibility Documents: Essential Requirements QA System 2-5	A report on the results of surveys stakeholders' surveys (students, alums, employers, teaching staff, employees) for the last year.
	Alumni (AES)		
	Employers (EES)		
	Faculty (SSS-AC)		
	Employees (SSS-AD)		
Annual Program Report (APR)	Students' Evaluation of Program Quality	Section B: Program Assessment Number 3	Same as KPI-P-01
	Students' Evaluation of Courses	Section B: Program Assessment Number 2	Same as KPI-P-02
KPIs Analysis Report	Students' Evaluation of Quality of Learning Experience in the Program	KPI-P-01	Measures the average overall rating of final year students on the quality of learning experience and satisfaction with various services and learning sources. (Students Experience Survey (SES). Read the KPIs document from NCAAA for more description.
	Students' Evaluation of the Quality of the Courses:	KPI-P-02	Measures the average rating for the quality of courses on a five-point scale. (Take the average of all CES surveys)
	Employers' evaluation of the program graduates' proficiency.	KPI-P-07	Part from Employer Survey Average of the overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey.
Other Surveys Based on NCAAA Criteria	Effectiveness of Field Training	NCAAA Criteria 2-2-6	Conducted by the Field Training Committee
	Academic Advising Survey	NCAAA Criterion 3-0-0	
	Survey on the Adequacy and Effectiveness of Learning Resources	NCAAA Standard 5	
	NCAAA Criteria	All Standards	

5.12 Procedure for Continuous Improvement

Objective

The objective of this procedure is to establish a systematic approach to continuous improvement within the BSc in Mechanical Engineering (BSc ME) program. This procedure aims to enhance the quality of the program by identifying opportunities for improvement, implementing changes, and monitoring their effectiveness.

Scope

This procedure applies to all aspects of the BSc ME program, including teaching and learning, administrative processes, stakeholder engagement, and program evaluation.

Responsibilities

- Head of Department (HoD): Oversee the continuous improvement process and ensure alignment with strategic goals.
- Academic Accreditation & Development and Quality Committee: Responsible for coordinating improvement activities, monitoring progress, and reporting outcomes.
- Program Committees: Implement improvement actions related to their specific areas.
- Quality Assurance Coordinator: Provide support and guidance in data collection, analysis, and reporting.

Procedure Steps

1. Identify Opportunities for Improvement

- Data Collection:
    - Gather feedback from stakeholders (students, alums, faculty, employers) through surveys, interviews, and focus groups.
    - Collect performance data from assessments, exams, course evaluations, and PLO assessment.
    - Analyze Key Performance Indicators (KPIs) to identify trends and areas for improvement.
- Review and Analysis:
    - Conduct a review of program performance, curriculum, and processes.
    - Analyze survey results and feedback to identify common themes and issues.
    - Identify gaps between current performance and desired outcomes.
- Prioritize Improvement Areas:
    - Prioritize areas for improvement based on impact, feasibility, and alignment with strategic goals.

- Develop a list of key focus areas for improvement, including short-term and long-term objectives.

2. Develop Improvement Plans

- Set Improvement Goals:
  - Define clear, measurable improvement goals for each focus area.
  - Ensure goals align with the program's mission, vision, and strategic objectives.
- Action Planning:
  - Develop specific action plans for each improvement goal, including tasks, responsibilities, timelines, and resources required.
  - Assign responsibility for each action item to the relevant program committee or individual.
- Approval and Communication:
  - Submit the improvement plans to the Academic Accreditation & Development and Quality Committee and the ME Department Council for review and approval.
  - Communicate the approved plans to all stakeholders, ensuring transparency and understanding of the objectives and actions.

3. Implement Improvement Actions

- Execution:
  - Implement the action plans according to the defined timelines and responsibilities.
  - Ensure collaboration and coordination among program committees.
- Monitoring and Support:
  - Monitor the progress of improvement actions regularly, providing support and resources as needed.
  - Address any challenges or obstacles that may arise during implementation.
- Documentation:
  - Document all actions taken, including progress reports, meeting minutes, and feedback received.

4. Evaluate and Monitor Progress

- Data Collection and Analysis:
  - Collect data and evidence to evaluate the effectiveness of implemented improvements.
  - Analyze performance against the set improvement goals and KPIs.

- Review and Assessment:
    - Conduct regular review meetings to assess the progress of improvement actions.
    - Identify any areas where further action is needed or where adjustments are required.

Documentation and Reporting

- Continuous Improvement Plan: A document outlining the goals, action plans, and responsibilities for each improvement area.
- Progress Reports: Regular updates on the status of improvement actions, including achievements and challenges.
- Final Improvement Report: A comprehensive report detailing the entire improvement process, outcomes, and lessons learned.

5.13 Procedure for Ensuring Academic Integrity

Procedure for Ensuring Academic Integrity

1. Introduction This procedure provides a comprehensive framework for maintaining academic integrity within the program. It defines measures for preventing academic misconduct, detecting violations, verifying the authenticity of student work, and handling incidents in alignment with the University of Tabuk Student Disciplinary Policy.

2. Preventive Measures

- **Student Education and Awareness:**
    - Conduct workshops on academic ethics, proper referencing, and plagiarism prevention.
    - Educate students on the use of plagiarism detection tools (e.g., SafeAssign) and proper citation methods.
- **Integration of Technology:**
    - Utilize Blackboard to enforce deadlines and monitor submissions.
    - Implement plagiarism detection software to assess student submissions (a a30% plagiarism threshold is allowed and 5% from a single source).

3. Detection Mechanisms

- **Plagiarism Detection Software:**
    - Use SafeAssign and similar tools to compare student submissions against online databases and highlight potential plagiarism.
- **Instructor Oversight:**
    - Review submissions for anomalies in quality, writing style, or approach.
    - Compare student assignments, particularly lab reports and project work, to identify inconsistencies.

4. Verification Techniques

- **Interviews or Oral Examinations:**
  - Require students to present or discuss their work to confirm their understanding. (Applicable to Senior Design Projects, Mini-Projects, and Field Training)
- **Practical Tests:**
  - Conduct in-class exercises to ensure students can independently demonstrate knowledge and skills. (Applicable to Lab Reports)
- **Progress Documentation:**
  - Require students to maintain and submit logs, raw data, or step-by-step reports as proof of independent work. (Applicable to Senior Design Projects)
- **Customized Assignments:**
  - Design unique assignments tailored to each student to minimize outsourcing risks. (Applicable to Mini-Projects and Assignments)

5. Response to Violations

All incidents of academic misconduct are handled based on the University of Tabuk Student Disciplinary Policy.

A. Cheating in Examinations

1. **Documenting the Incident:**
   - The proctor must record the incident in detail on the same day.
   - The exam paper and any supporting evidence must be attached and submitted to the faculty dean.
2. **Investigation Process:**
   - The faculty dean or a designated investigator interrogates the student.
3. **Penalties if Proven:**
   - The dean imposes one of the following penalties based on severity: a. Exclusion of the exam paper, resulting in failure in that exam. b. Exclusion of the exam paper for the course and another course(s), resulting in failure in both. c. Exclusion of all semester course examinations, resulting in failure in all subjects.
4. **Penalty Considerations:**
   - The severity of penalties considers factors such as past violations and any additional misconduct (e.g., disruption, refusal to comply, or assaulting the proctor).
5. **When Cheating is Not Proven:**
   - If the investigation does not confirm cheating, the student is awarded their earned grade.

B. Cheating in Reports, Research, and Projects

1. **Documenting the Incident:**
   - If cheating is suspected in reports, research, practical work, field training, or graduation projects, the instructor must document the incident in a detailed report and submit it to the faculty dean.

2. **Investigation Process:**
    - The faculty dean or a designated investigator interrogates the student.
3. **Penalties if Proven:**
    - The dean imposes one of the following penalties based on severity: a. Exclusion of the assignment, resulting in failure in that component. b. Exclusion of the assignment along with another course component, leading to failure in both. c. Exclusion of all semester course assignments, leading to failure in all.
4. **Penalty Considerations:**
    - The dean considers past violations and any additional misconduct (e.g., refusal to comply, disruption of academic processes, or misconduct towards faculty or peers).
5. **When Cheating is Not Proven:**
    - If the investigation does not confirm cheating, the student receives their earned grade for the work.