VERSION NO: 00 REVISION NO: 01

ENGINEERS BOARD OF KENYA
Enhancing Professionalism

EAC KENYA | Engineering Accreditation Committee, Kenya

ENGINEERING ACCREDITATION STANDARD

EAC- Kenya/STD/01

	NAME	DESIGNATION	DATE	SIGNATURE
Approved by:	Eng. Margaret OGAI	CEO	6.8.2024	

AUGUST, 2024

Notes on the period for which this Standard takes effect:

1. Accreditation is accorded based on graduation years for students, not intake years.
2. Any new provision or any change to any existing provision in the Standard will take effect on August, 2024 and will be effective for all student cohorts from year 1 to year 5.
3. Where programmes require time to adapt to any change, EAC- Kenya will allow adequate time for a reasonable transition to take place as justified by the programme.
4. In continually improving the Standards, the intention of EAC- Kenya is to accord the benefits to all students as soon as practically possible.

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ACKNOWLEDGEMENT

The EAC- Kenya-Kenya would like to acknowledge the contributions of various individuals and organizations in drawing up this Standard, their service to the EAC- Kenya is highly appreciated.

ACRONYMS

ADM - Accreditation Decision Meeting

AMC - Accreditation Management Sub-Committee

AU - Accreditation Unit

BEM - Board of Engineers Malaysia

CQI - Continual Quality Improvement

CUE - Commission of University Education

EAC- Kenya - Engineering Accreditation Committee "Committee"

EBK - Engineers Board of Kenya

HEAC - Head of Engineering Accreditation Committee Secretariat

IEK - The Institution of Engineers of Kenya

IHL - Institutions of Higher Learning (includes public or private universities)

KNQA - Kenya National Qualification Authority

MOE - Ministry of Education

OBE - Outcome Based Education

PEVs - Programme Evaluators

QMS - Quality Management System

SAR - Self-Assessment Report

SLT - Student Learning Time

Definition of Terms

Academic staff	Staff responsible for teaching and learning activities in the programme leading to the award of an engineering degree.
Accreditation Appeals Board	A Board to consider appeals from an Institution of Higher Learning on any EAC-Kenya decision.
Accreditation with Interim condition (Provisional Accreditation)	A programme given some conditions to be fulfilled within a certain period which is shorter than the accorded accreditation period.
Accredited Programme	An engineering programme whose graduates are acceptable for graduate registration with the EBK. This is accorded to a programme that satisfies the minimum standard for accreditation set by EAC-Kenya.
Approval	Permission from the relevant authorities to conduct a new programme.
Cessation/Termination of Accreditation	EAC-Kenya reserves the right to cease/terminate the accreditation if there is non-compliance or breach of accreditation requirements after accreditation has been given.
Concerns	Shortcomings that needs attention but do not lead to immediate failure
Course	Subject offered in the programme.
Degree **Declined Accreditation**	Bachelor of engineering programme leading to engineering qualification in Kenya. This is the status of a programme that fails to meet the minimum standard for accreditation. In such a case, a

	further application is not normally considered within the next one year.
Deferred Accreditation	This is the status given to a programme observed to have weaknesses. Such a programme is allowed to provide for corrective actions within a year from the date of deferment or as determined by EAC-Kenya.
Evaluation Panel	A panel of evaluators appointed by EAC-Kenya to evaluate an engineering programme for compliance with accreditation criteria.
Evaluator	A person appointed by EAC-Kenya: to evaluate application(s) for approval to conduct a new engineering degree programme, or to evaluate a programme(s) for accreditation, or to evaluate a continuing/interim accreditation.
External Examiner/Advisor	A person with high academic standing in a relevant field and a professional engineer registered by the Board appointed by the IHL to assess the overall academic programme and quality.
Faculty/School/Department	The entity responsible for designing and conducting the programme to be accredited.
Graduate	Anyone who has been conferred a degree.
Graduate Engineer **Industry Advisory Panel**	A person registered under Section 18 of the Engineers Act 2011. A group of professionals from the industry, government sector, and/or regulatory bodies in related fields that excludes academics, appointed by the IHL for an advisory role.

Opportunities for Improvement (OFI)	- Shortcomings that need attention but do not lead to immediate failure. - Areas with potential for enhancement beyond compliance.
Professional Engineer	A person registered under Section 16(a) of the Engineers Act 2011.
Programme	The sequence of structured educational experiences undertaken by students leading to completion, on satisfactory assessment of performance.
Stakeholders	Parties having interests (direct or indirect) in the programme output, for example, employers, sponsors, lecturers, and students.
Standard	Engineering Accreditation Standard.
Strength	Exceeding Minimum Requirement with outstanding attributes.
Student	Anyone undertaking an undergraduate programme.
Support staff	Staff responsible for supporting teaching, learning, and administrative activities in programme implementation.
Weaknesses	Clear non-compliance to accreditation criteria requiring corrective action.

FOREWORD

The Engineers Board of Kenya is a statutory body established under section 3(1) of the Engineers Act, 2011 with the overall mandate of registration of engineers and engineering consulting firms, regulation of engineering professional services, setting of standards, development and general practice of engineering.

The Board is committed to enhancing the quality of Kenyan engineering graduates and engineering services to improve regional and global competitiveness. Since 2019, EBK has been pursuing signatory status to the Washington Accord, focusing on regulating academic curriculum standards to align with global benchmarks.

To achieve this, EBK has established the Engineering Accreditation Committee (EAC- Kenya) to coordinate the accession process and develop a framework for Outcome-Based Education (OBE) in Kenyan engineering programmes. The committee will ensure proper implementation of OBE during accreditation visits, evaluating compliance based on three categories: Full Accreditation, Limited Accreditation, or Declined Accreditation.

This Standard provides guidelines on accreditation, ensuring engineering programmes meet EBK's Benchmark Accreditation Standard (BMAS). Institutions are encouraged to engage with this standard to foster high-quality teaching and learning.

EBK acknowledges support from the Board of Engineers Malaysia (BEM) and the Pakistan Engineering Council (PEC) in this journey and looks forward to ongoing collaboration with stakeholders.

Eng. Erastus K. Mwongera, CE, FIEK, CBS
Chairman
ENGINEERS BOARD OF KENYA

PREAMBLE

The Engineers Board of Kenya (EBK) regulates engineering practice and ensures the transformation of engineering students into competent professionals. With the expansion of engineering programmes and globalization, EBK aims to strengthen accreditation for local and international recognition of Kenyan qualifications.

This standard guide engineering programmes in implementing Outcome-Based Education (OBE) and improving quality. It covers four key areas: Accreditation Policy, Process, Criteria, and Self-Assessment Reporting. Accreditation is based on seven criteria, including programme design, curriculum, faculty, facilities, training duration, quality assurance, and students.

EAC- Kenya-trained assessors will evaluate compliance, with final accreditation decisions made by EAC- Kenya. This standard ensures engineering programmes meet the minimum accreditation requirements.

Eng. Margaret Ogai, CE
Registrar/CEO
Engineers Board of Kenya

CHAPTER ONE

1.0 ENGINEERING ACCREDITATION STANDARD

1.1 Introduction

The Engineers Board of Kenya (EBK) registers graduate, professional, consulting engineers and consulting engineering firms under the Engineers Act, 2011. The prerequisite for registration as a graduate engineer is a qualification in engineering recognized by the EBK.

A student undertaking an engineering degree course in Kenya aims to become a Professional Engineer (PE), a title conferred by section 47 of the Engineers Act 2011. The requirements for conferment of the title include among other requirements: -

i) Registration as a graduate engineer having received a degree in engineering from a university recognized by the Board.

ii) Obtained practical experience as prescribed under the Act;

A sound and wholesome engineering education forms the foundation of a competent professional engineer, consequently EBK bears the responsibility of ensuring that the quality of engineering programmes offered by the universities attains the minimum standard comparable to global practice.This underscores the importance of accrediting engineering programmes offered at the universities.

This Standard outlines details for accreditation of an engineering programme in Kenya. It serves to enable universities to meet the minimum standard stipulated for the accreditation of their existing engineering programmes or newly proposed programmes.

This Standard includes elements of outcomes in the engineering curriculum to ensure a Continual Quality Improvement (CQI) culture in the spirit of Outcome- Based Education (OBE).

1.2 The Engineering Accreditation Committee Kenya (EAC- Kenya)

EAC- Kenya is the body to which the EBK has delegated the function of accreditation and recognition of engineering programmes in tertiary institutions in accordance with Section 9 of the Engineers Act 2011. The EAC- Kenya is made of representatives from EBK, The Institution of Engineers of Kenya (IEK), Association of Consulting Engineers (ACEK), Council of Engineering Deans & Principals, Ministry of Education, the Kenya Association of Manufacturers (KAM) and the Kenya Private Sector Alliance(KEPSA).

1.2.1 Vision

A global leader in advancing excellence in engineering education.

1.2.2 Mission

To enhance the quality of engineering education by implementing accreditation standards that conform to international best practices.

1.2.3 Functions and Operations of EAC- Kenya

The Engineering Accreditation Committee is responsible for:

i) Implementation and maintenance of accreditation standards
ii) Evaluation and accreditation of engineering programs
iii) Accreditation decision-making
iv) Stakeholder engagement and coordination
v) International benchmarking and standards alignment
vi) Reporting and accountability to the Board

1.3 Accreditation Objective

Accreditation is a system by which an academic programme is assessed against specific criteria, which, if it is found to meet or exceed, becomes certified as accredited. It is a quality

control measure based on the applied criteria which reflect the desired standard to be met.

The Broad objective of accreditation is to ensure that graduates of the accredited engineering programmes meet the minimum academic requirements for registration as a graduate engineer with the EBK.

The specific objectives for conducting accreditation are: -

i. To establish the standard of knowledge and skill that are to be attained by persons seeking to become registered engineers and to review those standards from time to time as circumstances may permit;
ii. To ensure that graduates of engineering programmes accredited by EAC- Kenya are adequately prepared academically and possess the necessary skills to pursue productive and successful careers as professional engineers;
iii. To help parents, students and the general public to identify engineering programmes offered in various higher educational institutions that meet the standard of EAC- Kenya in complying with accreditation criteria;
iv. To encourage higher educational institutions in Kenya, to improve their training of engineers through the implementation of Continual Quality Improvement (CQI) which is an important requirement in Outcome-based Education accreditation system;
v. To provide standards for upgrading existing engineering programmes and establishment of new programmes in higher educational institutions in Kenya; and
vi. To formulate from the outcomes of accreditation visitations an industrial training policy which will form the basis of legislation by the Kenyan Government to ensure meaningful industrial training of engineering students

1.4 Legal Basis

The accreditation of engineering programmes is underpinned in the Engineers Act 2011 and the Engineers Rules 2019:

i. Section 7(1)(i) and (l) empowers the Board to;
   a. evaluate other engineering programmes both local and foreign for recognition by the Board;
   b. approve and accredit engineering programmes in public and private universities and other tertiary level educational institutions offering education in engineering;

ii. Section 9 provide for the Board by resolution either generally or in any particular case, delegate to any committee of the Board or to any member, officer, employee or an agent of the Board, the exercise of any of the functions or duties of the Board under the Act.

iii. Part IV, Rule 17 and the Fourth Schedule of the Engineers Rules, 2019

CHAPTER TWO

2.0 ACCREDITATION POLICY

2.1 Introduction

This section outlines the EAC- Kenya's accreditation policy underlying the accreditation process. Accreditation shall be considered upon a written request from the IHL.

2.2 General Rules on Accreditation

Accreditation applies to an individual programme that leads to a baccalaureate degree. programmes will be considered for accreditation if they are offered by an institution of higher learning that is either a public or a private university with a charter granted by the President of the Republic of Kenya as per Section 19(1)(a) of the Universities Act, 2012.

For purposes of accreditation, a programme is characterized by a curriculum that is regarded as an entity by the institution and that can be considered independently. All options in the programme are examined. Following the principle that a programme is only as strong as its "weakest link," the programme is accredited only if all options meet the established criteria.

To be accredited a programme must include the word "engineering" in its title and the title must be properly descriptive of the curriculum content. If a programme, by virtue of its title, becomes subject to the accreditation requirements for two or more programmes other than the programme named, the EAC- Kenya must have evidence that the programme name is appropriate for all students graduating in the programme regardless of the option taken. Furthermore, the EAC- Kenya must have evidence that all options contain a significant amount of the curriculum content.

Any change in the title of an accredited programme requires approval by the EAC- Kenya for that programme's continued accreditation.

The institution must verify that the EAC- Kenya programme curriculum content criteria are met

by all students. The institution must also verify that students have demonstrated competence in the courses taken to satisfy the criteria. It is the responsibility of each institution to provide an acceptance definition of competence.

Any significant change in an accredited programme must be reported to the EAC- Kenya. Any change which alters the circumstances under which the programme was accredited may necessitate an immediate assessment. The evaluation of the programme is based on detailed data provided by the institution and on the collective opinion of the members (of the visiting team, if necessary). The accreditation decision is made by the EAC- Kenya based on qualitative and quantitative considerations.

The EAC- Kenya shall determine the accreditation category of each academic engineering programme. Accreditation of a programme is granted for a specific term, the maximum being five years. Institutions shall be required to apply for new cycle accreditation one year before the expiry of the five years. The accreditation term shall run from the date of issue of the accreditation certificate. The term of accreditation is subject to review for cause at any time. The EAC- Kenya may grant accreditation for less than five years where the term of accreditation of the programme is intended to coincide with the term of accreditation of other programmes at the institution or where the EAC- Kenya considers that there are areas of concern.

The EAC- Kenya may at any time, audit and review accreditation status of the programmes offered by engineering training institutions. The EAC- Kenya may withdraw or discontinue accreditation where an institution fails to comply with terms of accreditation. An institution whose accreditation has been withdrawn or discontinued shall no longer refer the programme as being accredited.

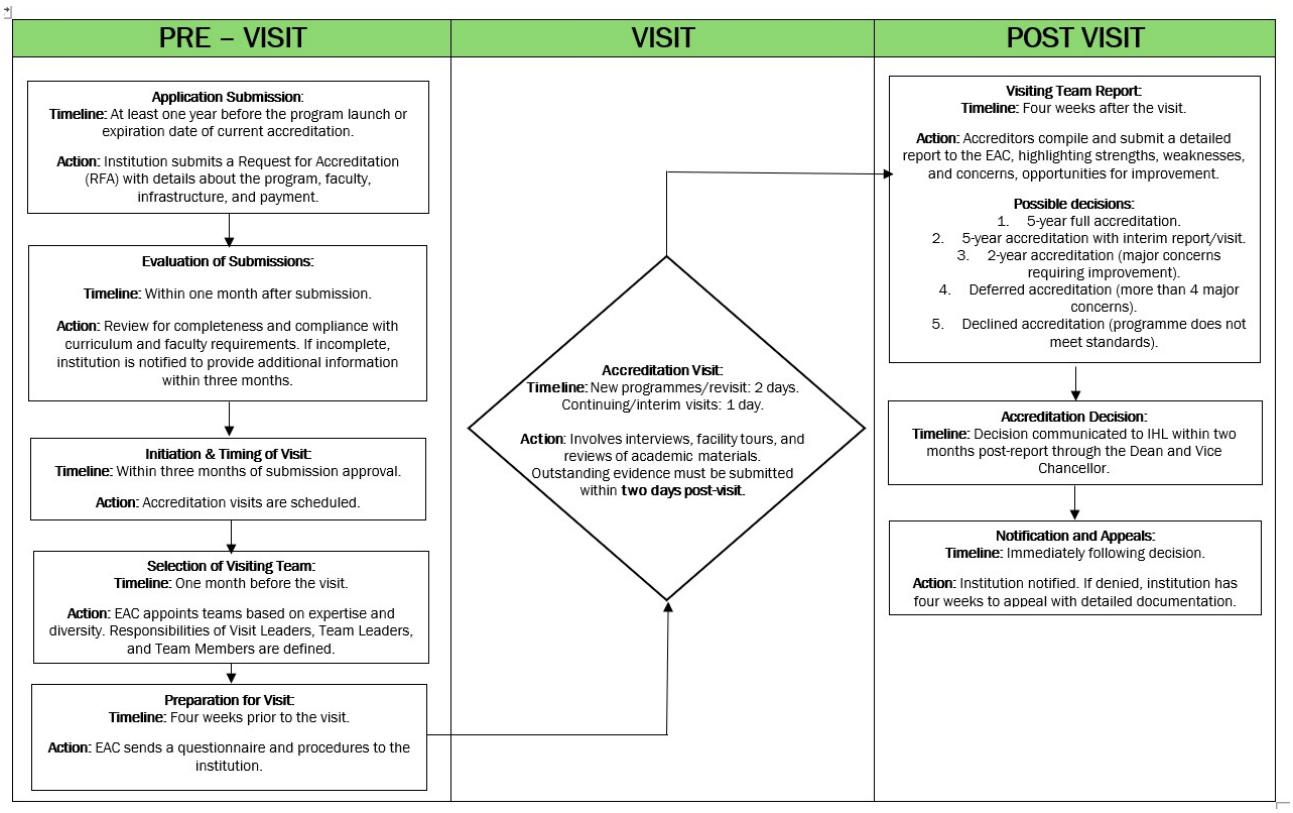
Changes in an accredited programme which violate the conditions under which accreditation was granted by the EAC- Kenya may lead to an immediate reassessment of the programme and/or termination of accreditation. Such changes include but are not limited to changes in; Programme design, Student admission criteria, faculty establishment, facilities and curriculum. Accreditation is granted if the EAC- Kenya judges that, at the time of the decision, the programme meets the published EAC- Kenya criteria.

2.2.1 The Accreditation Process

Accreditation of engineering programmes is undertaken by the EAC- Kenya at the request of the IHL. The EAC- Kenya's accreditation process will focus on outcomes and the internal systems developed by the IHL to ensure that the graduates are adequately prepared to enter the engineering profession. The process also involves determining the effectiveness of the quality assurance systems and procedures that ensure graduates are adequately prepared to practice engineering. The detailed Accreditation process is defined in section 2.4

Figure 1 below gives a summary of the accreditation process: -

Figure 1: Accreditation Process



2.2.2 The Accreditation Cycle

Accreditation is accorded to a programme for a maximum period of five (5) years per cycle and is accorded on a forward-based full programme cycle basis, specifying the years following and including the year an approval is given

2.2.3 Programmes

An IHL may offer programme/s via various pathways at the main campus. It is advisable that the various pathways are disclosed in the degree certificate or academic transcripts. For each of the pathways, the IHL shall apply for accreditation separately.

If the different pathways for the programmes from the same IHL that bear the same name are not disclosed on the degree certificate or academic transcripts, a single accreditation decision applies to all pathways, i.e. the accreditation decision of one pathway will affect the other pathways. A programme shall be evaluated based on the criteria stipulated in Chapter 3 and expounded in Appendix B in this standard.

2.4 Procedures for Accreditation of Engineering Programmes

2.4.1 Submission of Accreditation Application

i. An institution seeking accreditation of a programme shall submit to the EAC- Kenya a Request for Accreditation (RFA). The RFA must be signed by the institution's Chief Executive Officer (Vice Chancellor) and must be accompanied by:
   a. Detailed Self-Assessment Report accompanied by documentation of various required evidence.
   b. Proof of payment for the individual programme at the prescribed fees. The institution will receive an invoice for fees associated with the accreditation. Payment is due 45 days from date of the invoice.
   c. All submissions and correspondences to the EAC- Kenya shall be in English.

ii. An institution shall submit an application for accreditation of a programme not less than one year prior to the launch of a programme to allow adequate time for evaluation of submissions and accreditation visits. The following gives the various types of programmes accreditation, and the deadlines for applications:

a. New programme (first-cycle) accreditation: at least one (1) year before the launch of the programme.
b. New-cycle accreditation of accredited programme: at least one (1) year before the expiry date of the accreditation.
c. Interim or continuing accreditation: at least six (6) months before the expiry date of the accreditation or interim period.
d. Deferred accreditation: latest one (1) year after deferment decision.
e. Declined accreditation. Not less than one (1) year after declined decision.

The EAC- Kenya upon receiving the application by the IHL will decide on the dates of the accreditation visit. Once the visit dates have been fixed, the programme is given three (3) months prior to the visit to submit the necessary accreditation documentation as specified in Chapter 4 of this Standard.

The application will be deemed to have been withdrawn, if the documents are not submitted latest three (3) months before the set dates for the visit. The cut-off period for submission of application for programme accreditation by IHL is twelve (12) months beyond the year of graduation for any cohort, if the graduates are to be included in the accreditation decision. Failure to abide with the deadlines may result in delay or rejection of graduates' registration with EAC- Kenya.

2.4.2 Evaluation of Submissions

The EAC- Kenya shall carry out preliminary examination of the submitted documents to establish that:

a) The submissions are complete in all respects.

b) The submissions meet the minimum requirements as per section 3.1 of this Standard.

The EAC- Kenya shall communicate to the applying institution on the sufficiency or otherwise of the submissions. If the required information is not provided within a period of three (3) months, it shall be deemed that the IHL no longer intends to conduct the programme.

2.4.3 Initiation and Timing of Accreditation Visit

An accreditation visit to assess or reassess an engineering programme shall be conducted after the EAC- Kenya has certified that an institution's submissions are complete and responsive to the EAC- Kenya's accreditation criteria.

2.4.4 Selection of Programme Evaluation Team

The programme evaluation team will be composed of the following persons: -

i) Visit Leader: the person appointed to lead a multi-team visit.

ii) Deputy Visit Leader: the person appointed to assist the Visit Leader with the effective management of the visit in the case of a visit with multi-programmes and/or a multisite visit.

iii) Team Leader: the person appointed to lead the team of PEVs

iv) Team Member: a person appointed to a programme evaluation team.

The programme evaluation team includes experienced/qualified professional engineers from academia and industry who have a high standing in the profession, ability to assess curricula, competence in appraisal based on overall objectives and performance towards the achievements of the set goals, attended training on accreditation of engineering programmes and have no conflict of interest with the institution being visited.

The evaluation exercise shall be conducted by no less than two (2) and no more than three (3) programme evaluators per programme.

EAC- Kenya shall ensure that:

i) Sufficient PEVs are available for programme accreditations
ii) Sufficient Visit Leaders and Team Leaders are identified for anticipated visits.
iii) Accreditation teams comprise individuals who are listed as PEVs.
iv) There is maintained a list of accreditation assessors/evaluators for all programmes.
v) Identified persons may serve as Visit Leaders (VL), Team Leaders (TL), Team Members (TM) or Observers, provided they do not have a relationship with the education provider concerned to the extent that their judgement may be unduly influenced by the relationship (e.g. staff, members of the provider's advisory committee(s), external examiners or moderators).
vi) A representative composition in terms of diversity, experience, discipline and competency.

2.4.5 Qualifications of Programme Evaluators

2.4.5.1 Visit Leaders

An individual on the list of evaluators who has experience as a Team Leader may be identified by the HEAC and be designated a Visit Leader, provided that the individual satisfies the following criteria:

i) A registered Professional Engineer with the EBK (or equivalent competent authority)
ii) Has experience of at least three accreditation visits
iii) Has been identified by EAC- Kenya as a potential Visit Leader;
iv) Has completed the initial mandatory training in accreditation;
v) Has attended at least one annual refresher training.

2.4.5.2 Deputy Visit Leaders

An individual on the list of evaluators who has experience as a Team Leader may be identified by the HEAC and be designated a Deputy Visit Leader, provided that the individual satisfies the following criteria:

i) A registered Professional Engineer with the EBK (or equivalent competent authority)
ii) Has experience of leading an Evaluation Team as a Team Leader;
iii) Has experience of at least three accreditation visits
iv) Has been identified by the EAC- Kenya as a potential Deputy Visit Leader;
v) Has completed the initial mandatory training in accreditation;
vi) Has attended at least one annual refresher training.

2.4.5.3 Team Leader

An individual on the list of evaluators who has experience as a Team Member may be identified by the HEAC and be designated as a Team Leader, provided that the individual satisfies the following criteria:

i) A registered Professional Engineer with the EBK (or equivalent competent authority)
ii) Has experience of at least two accreditation visits as a Team Member;
iii) Has been identified by the EAC- Kenya as a potential Team Member;
iv) Has completed the initial mandatory training in accreditation, and
v) Has attended at least one annual refresher training.

2.4.5.4 Team Members

i. An individual on the list of evaluators may be identified by the HEAC and be designated a Team Member, provided that the individual satisfies the following criteria:
    a. A registered Professional Engineer with the EBK (or equivalent competent authority)
    b. Has experience of at least two accreditation visits as a Team Member;
    c. Has been identified by the EAC- Kenya as a potential Team Member;
    d. Has completed the initial mandatory training in accreditation, and
    e. Has attended at least one annual refresher training.
ii. The accreditation team that evaluates a programme will where necessary, in consultation with EAC- Kenya, the Visit Leader, Deputy Visit Leader and Team Leader may co-opt competent persons to fill vacancies as required.

iii. Where two or more programmes are evaluated simultaneously and are judged by EAC-Kenya to have significant overlap in engineering content, the teams may have common membership, providing there is a minimum of two (2) members per programme. The following conditions should also be satisfied:

a. The team members' individual specialities should be dispersed as evenly as possible across the sub-disciplines of the programme under evaluation.
b. All programme evaluators must be registered with the EAC- Kenya for the type of programme, except for where co-option has been done
c. Where the circumstances so require, HEAC after consulting the EAC- Kenya Chair, appoint a team member who is not a registered evaluator with the EAC-Kenya but has academic and professional qualifications relevant for evaluating a programme for which there is no person registered with the EBK.
d. The Team Leader may designate a Team Member as rapporteur, but the Team Leader retains final responsibility for the report.

2.4.6 Process for Appointing Teams

Most visits require several teams for the programmes on offer. The EAC- Kenya shall appoint Visit Leaders, Team Leaders and Team Members through the process defined in Section 2.4.5 In the case of a visit with five (5) or more programmes or a multisite visit, persons qualified to be Visit Leaders may be appointed as Deputy Visit Leaders as required for effective management of the visit. The Visit Leader must assign responsibilities to the Deputy Leader(s) but retains overall responsibility of the Visit Leader functions.

During the phasing in of the outcome-based criteria and associated accreditation procedures, the HEAC will assist the Visit Leader and Team Leaders in procedural matters and in interpretation of the criteria.

2.4.6.1 Visit Leader's Responsibilities

A Visit Leader accompanies a multi-team visit. In accepting the appointment, a Visit Leader commits to the following duties:

i) Finalizing the visit timetable in consultation with EAC- Kenya.
ii) Pre-visit liaising with team leaders and members to ensure teams are fully prepared for the visit.
iii) General coordinating and problem-solving during the visit and liaising between teams on mutual interests.
iv) Courtesy/accreditation visits with executive officers/ Heads of IHLs
v) Assisting team leaders to produce consistent recommendations across teams and across visits.
vi) Ensuring that team reports are complete, consistent and contain fully justified conclusions, particularly when conclusions are negative or critical.
vii) Presenting reports as may be required at the EAC- Kenya accreditation decision meeting.
viii) Evaluating the accreditation process and the performance rating of Team Leaders post visit.
ix) Identifying Team Leaders to be trained in the future as potential Visit Leaders.

2.4.6.2 Team Leader's Responsibilities

In accepting the appointment, a Team Leader commits to perform the following duties:

i) Assist with the identification of Team Members if such a need arises.
ii) Read the documentation fully before the visit in order to identify issues that require investigation and instances where additional information is required.
iii) Communicate with Team Members regarding issues and information requirements that they have identified.
iv) Collate issues and information requirements.
v) Communicate information/clarification requirements to the HEAC.

vi) During the visit, ensure that all necessary information to support the team's findings and recommendations is collected and verified.

vii) Allocate duties to Team Members.

viii) Ensure that all deficiencies and concerns are communicated to the Head of Department during the visit.

ix) Ensure that the draft report is written by the end of the visit.

x) Ensure that the Final Report is produced, approved by the Team, signed and checked for consistency and submitted to the EAC- Kenya through the Visit Leader if any.

xi) Identify potential Team Leaders for training for future visits.

2.4.6.3 Team Member's Responsibilities

In accepting the appointment, a Team Member commits to perform the following duties:

i) Before the visit, read the documentation fully in order to identify issues that require investigation and instances where additional information is required.

ii) Identify points lacking information for further investigation.

iii) Be present for the entire visit.

iv) Perform duties assigned by the Team Leader.

v) Participate in staff and student interviews.

vi) Scrutinize on-site documentation.

vii) After the visit, work with the Team Leader to produce the agreed Final Report.

Where a member of the visiting team has an interest in the institution applying for accreditation, that member shall disclose that fact and shall not take part forthwith in the visit, provided that if the majority of the members present are of the opinion that the experience or expertise of such member is vital to the deliberations of the meeting, the visiting team may permit the member to participate in the deliberations subject to such restrictions as it may impose.

The IHL shall be notified of the visiting team. A request for a replacement on the visiting team may be made by the institution only for good cause.

2.4.7 Preparation for Accreditation Visit

The Evaluation Panel for a programme should meet at least once (either virtual or physical) upon receiving the accreditation documents, and again on the evening of Day1 before the actual accreditation visit in order to study and discuss documents, and systematically identify and agree on any shortcomings prior to the visit. The Evaluation Panel should strategically plan and/or put in request for supplementary input or Request for Information (RFI) or Request for Clarification (RFC) from the IHL to fill the gaps before the visit. This request for further information required should be communicated to the IHL through the EAC- Kenya.

2.4.8 Accreditation Visit

The accreditation visit will normally be scheduled for a period of two (2) days for new programme/new cycle/revisit (in deferment case), or one (1) day for continuing/interim visit. The overall conduct of the visit shall be managed by the EAC- Kenya.

2.4.8.1 Activities during the visit

The visit shall normally include but not limited to the following:

i) Opening meeting with the IHL Management, Dean of Engineering and the Chairs of the Departments responsible for the programme(s)
ii) Meeting with faculty staff members.
iii) Meeting with students.
iv) Meeting with external stakeholders such as alumni, employers, and industry advisors.
v) Visiting and checking of facilities.
vi) Checking relevant documents.

vii) Exit meeting with IHL Management.

viii) Meetings with all stakeholders are important as this would give an indication of their involvement in the CQI process of the programme.

ix) A review of recent examination papers, laboratory instruction sheets, student transcripts (anonymous, if necessary), student reports and theses, models or equipment constructed by students and other evidence of student performance; and

x) Evidence of Research undertaken by Academic Staff.

2.4.8.2 Schedule of Program

i) **Accreditation Visit Day Zero (0)**

The programme evalautors will hold a pre-visit meeting in the evening before the first day of the visit. The meeting is mainly focused on the points of concern noted by the team members and exchange of views on the information provided in SAR.

ii) **Accreditation Visit Day 1**

TIME	ACTIVITY
7:30 am	Arrival and Registration
8.00am – 8.30 am	Courtesy call on Vice Chancellor accompanied by Dean
Opening meeting with the Vice Chancellor, Deputy Vice Chancellors, Dean and/or Head/Chair of the Department	
8.30am – 8.35am	Opening Prayer
8.35 am – 9:00am	Remarks by Dean/Deputy Vice Chancellors/ Vice Chancellors/Chairman EAC- Kenya
9.00am – 10:30am	Review of SAR
10.30am -11.00am	Tea Break

11.00am – 12.00pm	Faculty Meeting with Dean and/or Head/Chair of Department alongside staff of the faculty/School/Department/Programme
12.00pm -1.00pm	Laboratory and Workshop Visit
1.00pm – 2.00pm	Lunch
2.00pm - 3.00pm	Visits to common facilities: e.g. Library, Classrooms, Computer labs, Recreational facilities, campus accommodations, and general environment, etc
3.00pm – 4.00pm	Meeting with Students
4.00pm - 4.30pm	Tea Break and Departure

iii) **Accreditation Visit Day 2**

TIME	ACTIVITY
8.00 am – 8:30 am	Arrival and Registration
9.00am – 10.00am	Meeting with external stakeholders (employers, alumni, industry advisors/programme advisors)
10.00am -10.30am	Tea Break
10.30am – 11.00am	Meeting with Techniciand (Lab) and Administrative Staff
11.00 am -1.00 pm	Evaluation Panel review of examinations, course materials and student work. (Any other clarification, additional documentation can be provided during this time) Review of quality assurance system and outcome-based assessment processes
1.00pm – 2.00pm	Lunch

2.00pm -4.00pm	Evaluation Panel Meeting (Private Session) Preparation of draft reports
4.00pm – 4:15pm	Closing Meeting
4:15pm – 4.30pm	Tea Break and Departure

Any outstanding evidence shall be submitted within 2 days upon completion of accreditation visit. Should relevant information not be provided, the team may report that certain evidence was not available and that compliance of the programme with one or more criteria could not be verified. Such a programme will be treated as deficient, and accreditation may, at best, be granted for a limited period with a revisit required.

2.4.9 Report and Accreditation Decision

The evaluation report shall be prepared by the programme evaluators (and shall be submitted to the EAC- Kenya within four (4) weeks after the visit. The accreditation decision shall be made by the Committee based on the result and information gained from the accreditation visit process.

In arriving at an accreditation decision following the visit, the Committee shall consider the accreditation history, the information included in the completed SAR, the visiting report, the institution's response to the visiting team report, any further clarifying correspondence and any other relevant information.

Elements of the Visiting Team's findings for consideration by the EAC- Kenya will be classified as strengths, weaknesses, concerns, deficiencies and opportunities for improvement (OFI) and this will guide the ADM in making a decision on the accreditation status of the programme as follows: -

i) **5 Years Full** - No major concerns or weaknesses.

ii) **5 years with interim report/interim visit within 2 years** - No major concerns though may have some weaknesses

iii) **Accreditation 2 years** – 1 to 2 major concerns

iv) **Deferred** - More than 2 major concerns.

v) **Declined** - Major weaknesses found even after resubmission.

A deficiency may be declared in case the IHL fails to submit evidence required in the documentation or during the site visit to demonstrate that an accreditation criterion is satisfied.

2.4.10 Communication of accreditation decision

Following the Committee's accreditation decision, the IHL shall be notified of the decision through the Vice Chancellor and the Dean. The IHL will be expected to inform students and staff of the process of accreditation and of the accreditation status of the programme.

2.4.11 IHL's response in cases of decisions with identified deficiencies

The IHL should, when acknowledging EAC- Kenya's decision, submit a Quality Improvement Plan Outlining measures to remedy the deficiencies identified.

2.4.12 Expiry of Period of Accreditation

i) It is expected that IHLs which have programmes coming to expiry of their respective accreditation will request EAC- Kenya in a timely manner to reaccredit their programmes. Notwithstanding, the HEAC will issue a notice to the IHL advising the latter of the impending expiry (as per section 2.4.1).

ii) Provisional accreditation will expire at the end of the period unless extended or converted to accreditation as a result of an accreditation visit.

iii) When accreditation or provisional accreditation expires, the HEAC will compile a statement highlighting all steps taken by the EAC- Kenya to show that all reasonable

measures to initiate the evaluation and that failure to arrange a visit is a consequence of the IHL's wishes, refusal or default.

iv) Expiry of accreditation without an evaluation visit must be reported to the EAC- Kenya which will determine the course of any further action.

v) Such a decision must also be reported to all the relevant stakeholders.

2.4.13 Notice of Termination of accreditation

If the Committee determines that significant weaknesses exist in a currently accredited programme, a Notice of Termination of Accreditation shall be issued within three (3) months of that determination. The Notice of Termination of Accreditation shall be copied to the Ministry of Education, Science and Technology, the Commission of University Education and the Kenya Universities and Colleges Central Placement Service.

A Notice of the Termination of Accreditation shall specify that the accreditation of the programme is extended for a maximum of three years at which time the accreditation is terminated unless the EAC- Kenya determines, before that date, that the matters giving rise to its concerns have been resolved adequately. To determine whether these matters have been resolved an accreditation visit and a report shall be presented to the EAC- Kenya.

If the EAC- Kenya determines that matters giving rise to its concerns have not been resolved adequately, the accreditation of the programme shall be terminated on the date specified in the Original Notice of Termination of Accreditation. If the EAC- Kenya determines that the matters giving rise to its concerns have been resolved adequately, accreditation shall be extended for an appropriate period and no loss of accreditation will have occurred.

2.4.14 Request for an Early Revisit

In the event that an unaccredited programme is denied accreditation, the institution may

submit a request for an early re-visit. This request, accompanied by a description of positive changes that have been implemented, must be received by the EAC- Kenya Secretariat within 60 days of the notification to the institution of the accreditation action of the EAC- Kenya. If the EAC- Kenya is satisfied that positive changes of the substance have been made, a revisit will be scheduled immediately following the decision to deny accreditation. The Institution applying for a revisit shall bear all the costs associated with the visit.

2.4.15 Formal Review

In the event of a decision by the EAC- Kenya to terminate the accreditation of a programme or to deny accreditation to an unaccredited programme, the institution may apply for a formal review of the EAC- Kenya's decision. Copies of the document setting out these procedures shall be made available upon request.

2.4.16 Informal Evaluation or Visit

If requested by an institution, the EAC- Kenya will assist to arrange for an informal visit to an unaccredited programme at an appropriate time in its development. The purpose of the evaluation or visit is to provide comment and advice to the institution with respect to the programme.

No undertaking is given by the EAC- Kenya as to the eventual accreditation of the programme. A report is presented to the institution and no report is presented to the EAC- Kenya. The cost of such an evaluation for the visit, including nominal compensation for the visitors or persons who are asked to carry out evaluation, is borne by the institution seeking accreditation of its programme(s).

The IHL shall make an application for programme accreditation as per the requirements Chapter 3 and 4 of this Standard to the EAC- Kenya.

The accreditation visit shall be deferred if the submitted documents are of unacceptable quality, or do not follow the required format of chapter 4 of the Standard. In such a case, the IHL shall resubmit the application.

If the documents submitted follow the required format, but the contents are found to be inadequate, the IHL shall be required to provide further information, or clarification. If the IHL does not provide further information in good time for the visit, the EAC- Kenya may cancel the visit.

2.4.17 Unscheduled/Periodic Visits

This visit shall be conducted under the directions of the Chairman EAC- Kenya in any extraordinary circumstances being reported in writing against an IHL. The visit shall not be planned in advance and the concerned IHL shall be informed one day in advance. The Chairman EAC- Kenya shall constitute the Program Evaluation team. The visit report shall be submitted to the Chairman, EAC- Kenya no later than 24 hours after conducting the visit.

2.4.18 Revisions to an Accredited Programme

The IHL shall update the EAC- Kenya and CUE of major changes (such as, 30% or more of the curriculum, location, pathways, programme name or programme duration) that may impact an accredited programme. Failure to do so may cause the EAC- Kenya to reconsider the accreditation decision awarded earlier. The EAC- Kenya may then direct the IHL to apply for re-accreditation of the revised programme.

2.4.19 List of Accredited Programmes

i) The list of accredited programmes maintained by the EAC- Kenya includes only those programmes that have been accredited by the EAC- Kenya. EAC- Kenya will regularly update the list of accredited programmes with their dates of accreditation on the website and use of public notices from time to time.

ii) EAC- Kenya may also insert any remark or observation regarding recognition of the accredited degrees by other members of the Washington Accord and by any competent authority of jurisdictions that are not signatories to the Washington Accord.

iii) The List will record the initial and the final year of the accreditation period(s).

iv) In the case of a programme that is no longer accredited, the previous period(s) of accreditation are shown.

v) The list of accredited programmes indicates the full programme title, the university, and branch/town. In addition, where the qualification may be attained by different pathways, the entry will specify the pathway(s) to which the accreditation applies.

vi) Dates of validity of accreditation are specified in month/year format and except in the case of summary withdrawal of accreditation, dates demarcate academic years or semesters, depending on the arrangement of the programme.

vii) Dates of validity of accreditation of each programme refer to the academic year in which the individual completes the requirements to graduate and includes re-examination without re- registration early in the following year.

2.4.20 Fairness in Accreditation Reporting and Decisions

The EAC- Kenya has put in place the following minimum set of measures to ensure fairness and adequate transparency in reporting the visit findings:

i) Evaluation of the programme must be performed in accordance with the Engineering Accreditation Standards.

ii) Identified any potential deficiencies, concerns, comments and constructive criticism must be raised with the Dean, Chair/Head of the programme and relevant staff members at the interviews during the visit.

iii) The visiting team will prepare a complete report and submit it to the HEAC with a letter of transmittal signed by the visiting team leader/team leader.

iv) The HEAC will appoint at least one (1) moderator to review and moderate the report submitted by the evaluation team to:-

a. Determine if the report reflects a logically consistent judgment of the evidence against the accreditation criteria and whether the recommendations on deficiencies and concerns, if any, relate to the accreditation criteria or not; and

b. Confirm that the reports conform to the prescribed format and the writing is of adequate quality for the various audiences which include the IHL management, the Commision of University Education and the Ministry of Education.

The moderators must not edit the reports or make judgments on the programme and may refer the reports back to the visiting team leader/team leader for improvement.

The moderation will be done in conjunction with the visiting team leader/team leader.

v) The EAC- Kenya will submit the moderated report to the IHL for rebuttal (response to the findings). No new information or description of remedial measures may be submitted at this stage.

vi) On receipt of the IHL's response, the EAC- Kenya will share the rebuttal with the visiting team leader/team leader for amendment of their report if necessary. This report will be considered the final report and will be tabled at the Accreditation Management Sub-committee.

vii) The visiting team leader/team leader will be invited to the Sub-committee meeting to discuss the final report

viii) The AMS will prepare a report for the ADM and the visiting team leader/team leader will also be invited to make any clarifications as necessary on the final report and will be excused from the ADM on completion of making the report.

ix) In its deliberations, the EAC- Kenya will take into account any matter raised by the visiting team leader/team leader at the meeting.

x) The EAC- Kenya will inform the IHL of the decision(s) via a letter to the Vice Chancellor and copied to the Dean of the Faculty. Deficiencies and concerns as applicable to each

decision must be clearly indicated in the letter with a time frame for addressing them. The decision letter must stipulate the requirement to notify the EAC- Kenya of material change during the period of accreditation and the obligation on the IHL to inform students of the accreditation status of the programme.

2.4.21 Appeal Procedures

The EAC- Kenya decision is final. However, an IHL may appeal against a decision made by the EAC- Kenya. The notice of appeal must be made in writing along with the prescribed fee to the Accreditation Appeals Board within two (2) weeks upon receiving the decision, stating the basis of the appeal. Appeal documents are to be submitted within four (4) weeks after the above notice of appeal.

The Appeals Board shall consist of the Chairperson of EBK, Chairman Council of Engineering Deans and Principals, Chief Executive Officer of EBK and Chief Executive Officer of CUE or their nominated representatives. The Chairperson of EBK or the nominated representative shall be the Chairperson of the Appeals Board. If necessary, the Appeals Board may appoint a Special Committee, comprising members who are experienced in the accreditation process, to consider the appeal. A meeting of the committee will be convened, wherein the IHL and the members of EAC- Kenya may be invited to present their cases. The committee may also visit the institution, if necessary. The recommendations of this committee will be considered for making a final decision.

Any expenses incurred shall be borne by the IHL. The decision of the Appeals Board shall be forwarded to the IHL within three (3) months from receipt of the complete documents. The decision of the Appeals Board shall be final.

2.4.22 Observers in Program Accreditation Visit

EAC- Kenya may include observers(s) in the program evaluation team to build their capacity by providing on-job training to act as potential PEVs in future or to see the whole process

of evaluation/accreditation for any specific purpose. The role of such observers shall remain strictly non-participatory during the entire accreditation visit unless specifically permitted by the Convener and HEI. An Observer must neither transmit nor reveal the contents of documents and information obtained during the accreditation visit to any third party. All observers must also adhere to the Code of Ethics for Observers as prescribed in Appendix H of the Standard.

2.4.23 Confidentiality

Documents or other information obtained by the Programme Evaluators and EAC- Kenya members in connection with the accreditation exercise shall be treated as confidential. Records and deliberations of the EAC- Kenya are kept confidential. Documents describing policies and procedures of the EAC- Kenya will also be maintained by the EAC- Kenya Secretariat and will be made available upon request.

See Appendix G for Code of Ethics for Programme Evaluators.

2.4.24 Expenses

The IHL shall bear all costs incurred in carrying out activities related to the approval and accreditation of a programme.

2.4.25 Conflict of Interest

Members of the EAC- Kenya, Evaluators, Appeals Board and EAC- Kenya staff are expected to be constantly aware of any conflict of interest. Members shall declare their interest or withdraw from any situation or activity that may constitute a conflict of interest.

See Appendix G for Code of Ethics for Programme Evaluators.

CHAPTER THREE

3.0 QUALIFYING REQUIREMENTS AND ACCREDITATION CRITERIA

3.1 Qualifying Requirements

The assessment process will involve two parts:

(i) Initial assessment of qualifying requirements.

(ii) Detailed assessment of the programme based on the accreditation criteria.

The qualifying requirements are meant to screen out programmes that do not meet the core requirements of the assessment criteria. **Failure to meet any one of the qualifying requirements will disqualify the programme from further assessment.**

There are eight components of the qualifying requirements and each programme is expected to have all the components. These components are:

i) Outcome-based Education (OBE) implementation.

ii) A minimum of 3400AUs of which 840 AUs are required for Mathematics and Basic Sciences, 2100AUs are attributed to Engineering Sciences and Design (including final year project and industrial attachments) and at least 450AUs Complimentary Studies. The programme covers 5 academic years. Industrial training must cover a minimum of eight (8) weeks)

iii) Integrated Design Project (IDP)

iv) Final year project

v) Industrial training (minimum of 8 weeks)

vi) Full-time academic staff (minimum of eight (8) with at least three (3) Professional Engineers registered with the EBK

vii) Staff: student ratio 1: 25 or better.

viii) External examiner/advisor report. (one in every one academic year)

If the programme has met all the qualifying requirements, a detailed assessment of the

programme based on the accreditation criteria as explained in the following sections will be carried out.

Note: Please refer to Guidelines for Evaluators for further elaboration of the expectation with regard to this section.

3.2 Accreditation Criteria

An engineering programme shall be assessed by the EAC- Kenya to enable graduates of the programme to register as graduate engineers with the EBK. The assessment involves a review of qualifying requirements of the IHL and an evaluation based on the following criteria:

i) Criterion 1 – Programme Design

ii) Criterion 2 – Programme Curriculum Content

iii) Criterion 3 – Faculty Staff Establishment

iv) Criterion 4 – Institutions Training Facility and Infrastructure

v) Criterion 5 – Training Duration

vi) Criterion 6 – Quality Assurance

vii) Criterion 7 – Students

3.2.1 Criterion 1 – Programme Design

A programme should be intellectually credible, coherent and should meet national needs, needs of students and other stakeholders. The programme should maintain an appropriate balance of theoretical, practical and experiential knowledge and skills.

Emphasis is placed on qualitative evaluation of the programme and the overall environment in which the programme is presented.

Major importance is attached to the quality of the educational experience as reflected by the quality of the students, the faculty, the support staff, the administration, the laboratories, workshops, library, the computing facilities and other supporting facilities. The quality of the

educational experience is also reflected by the morale and commitment of faculty, support staff and students.

The distinctive features, which determine if a course is accredited, are -

i) appropriate depth and breadth of technical content, with emphasis on fundamentals and inclusion of relevant mathematics and engineering science;

ii) application of scientific and engineering principles to the solution of practical problems of engineering systems and processes;

iii) an introduction to good engineering practice and the properties, behaviour, fabrication and use of relevant materials and components;

iv) mandatory inclusion of design studies (including manufacturing, reliability, maintainability, quality assurance as well as economic aspects) as an expression of the practical application of theory and accumulated experience;

v) emphasis on methods of practical problem solving using the latest technology;

vi) technical decision making, its commercial and economic implementation; the ability to use technical information's services; knowledge of government regulations and labour management as well as other obligations of the engineer to his profession, community and the environment;

vii) communication skills and the ability to seek further education and stay up to date with new developments; and significant industrial involvement.

The Programme's admissions requirement shall be in conformity with the Kenya Universities and Colleges Central Placement Service established by section 55(1) of the Universities Act 2012.The minimum qualifications shall be as follows:

a. Kenya Certificate of Secondary Education (KCSE): The Programmes are for direct entry of qualified Kenya Certificate of Secondary Education (KCSE) graduate. A KCSE candidate (as per KUCPPS requirements) should have

obtained a minimum aggregate grade of C+, obtained at least a C+ in English/Kiswahili and a minimum C+ in each of the following subjects: Mathematics, Physics and Chemistry. The policy for admitting individual students with advanced standing must ensure that the foregoing requirements for curriculum content are satisfied.

3.2.1.1 Programme Educational Objectives

Programme Educational Objectives (PEOs) are specific statements/goals consistent with the mission and vision of the IHL, are responsive to the expressed interest of programme stakeholders, and describe the expected achievements of graduates in their career and professional life (3 to 5) years after graduation.

The PEOs must be considered in the design and review of the curriculum in a top-down approach. The programme shall publish and appropriately review the PEOs at the determined time, and ensure the PEOs are linked to the POs and considered for the curriculum delivery.

3.2.1.2 Programme Outcomes

Programme Outcomes describe what students are expected to know and be able to perform or attain by the time of graduation. These relate to the skills, knowledge, and behaviour that students acquire through the programme. Students of an engineering programme are expected to attain the following POs:

i) **Engineering Knowledge:** Apply knowledge of mathematics, natural science, computing and engineering fundamentals, and an engineering specialization as specified in WK1 to WK4 respectively to develop solutions to complex engineering problems;

ii) **Problem Analysis:** Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences with holistic considerations for sustainable development (WK1 to WK4);

iii) **Design/development of solutions:** Design creative solutions for complex engineering

problems and design systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations as required (WK5)

iv) **Investigation:** Conduct investigations of complex engineering problems using research methods including research-based knowledge, design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions (WK8)

v) **Modern Tool Usage** - Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering problems, (WK2 and WK 6);

vi) **The Engineer and the World:** When solving complex engineering problems, analyze and evaluate sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the environment (WK1, WK5, and WK7)

vii) **Ethics:** Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion (WK9)

viii) **Individual and Collaborative Team work:** Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings (WK9)

ix) **Communication:** Communicate effectively and inclusively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, taking into account cultural, language, and learning differences.;

x) **Project Management and Finance:** Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own

work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.;

xi) **Life Long Learning:** Recognize the need for, and have the preparation and ability for independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change (WK8)

The range of **complex problem solving** and **complex engineering activities** are given in Appendix A– Section (d) Definition of Complex Problem Solving; Section (e) Definition of Complex Engineering Activities; and Section (f) lists the Knowledge Profile (WK).

An Engineering programme for which accreditation is sought must respond to the following:

- **Programme Outcomes (POs)**: The IHL/faculty shall have published POs that have been formulated considering items (i) to (xi) given above, and any added outcome that can contribute to the achievement of its stated PEOs.
- **Processes and Results:** All POs shall be considered in designing the curriculum. The attainment of the POs must be adequately assessed, and used for improvements at course and programme levels.
- **Stakeholders' Involvement**: The IHL/faculty shall provide evidence of stakeholders' involvement with regard to (i) and (ii) above.

Note: Please refer to Evaluation Guidelines for further elaboration of the expectation with regards to this section.

3.2.2 Criterion 2: Programme Curriculum Content

The criterion for curriculum content assures a foundation in mathematics and basic sciences, a broad preparation in engineering sciences and engineering design and an exposure to non-technical subjects that complement the technical aspects of the curriculum. Judgment is applied to both the qualitative and quantitative criteria requirements in each instance. To satisfy accreditation requirements, an engineering programme must include at least a

minimum of each of the curriculum components specified in this section.

On an hourly basis, accreditation Units (AU) are defined as; activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time of that activity.'

i) One hour of lecture (corresponding to 60 minutes of activity) = 1 AU

ii) One hour of laboratory, workshop or tutorial work = 05 AU.

3.2.2.1 Mathematics and Basic Sciences:

i. A minimum of 840 AU of a combination of Mathematics and Basic Sciences. Within this combination, each of mathematics and basic sciences must not be less than 390 AU. This leaves 60 AU for any combination of mathematics and basic sciences that may be deemed desirable.

ii. Mathematics include appropriate elements of linear algebra, differential and integral calculus, differential equations, probability, statistics, numerical analysis and discrete mathematics.

iii. The basic (natural) sciences components of the curriculum must include elements of physics and chemistry; elements of life sciences and earth sciences may also be included in this category. These subjects are intended to impart an understanding of natural phenomena and relationships through the use of analytical and/or experimental techniques.

3.2.2.2 Engineering Sciences and Engineering Design

i) A minimum of 2100 AU of a combination of engineering sciences and engineering design. Within this combination, each of engineering sciences and engineering design must not be less than 600 AU. This leaves 900 AU for any combination of engineering sciences and engineering design that may be deemed desirable.

ii) Engineering science subjects normally have their roots in mathematics and basic sciences, but carry knowledge further towards creative applications. This may involve the

development of mathematical or numerical technique, modelling, simulation and experimental procedures. Application to the identification and solution of practical engineering problems is stressed. Such subjects include the applied aspects of strength of materials, fluid mechanics, thermodynamics, electrical and electronic circuits, soil material science, geosciences, environmental studies and other subjects pertinent to the discipline. In addition, the curriculum should include engineering science content which imparts an appreciation of important elements of other engineering disciplines.

iii) Engineering design integrates mathematics, basic sciences, engineering sciences and complementary studies in developing elements, systems and processes to meet specific needs. It is a creative, interactive and often open-ended process subject to, and, depending upon the discipline. These constraints may relate to economic, health, safety, environmental, societal or other pertinent interdisciplinary factors.

iv) The engineering curriculum must culminate in a significant design experience which is based on the knowledge and skills acquired in earlier course work and which preferably gives students an exposure to the concepts of team work and project management. A research project may be interpreted as engineering design provided it can be clearly shown that the elements of design, as noted in the definition, are fulfilled in the completion of the project.

v) Appropriate content requiring the application of computers must be included in the engineering sciences and engineering design components of the curriculum.

3.2.2.3 Complementary Studies

i) A minimum of 450 AU of studies in humanities, social sciences, arts, management, engineering economics, communication and some elements of Law that complement the technical content of the curriculum should be incorporated in the curriculum. While considerable latitude is provided in the choice is suitable course considered to be essential in the education of an engineer, the curriculum must include studies in engineering economics and on the impact of technology on society, and subject matter

that deals with central issues, methodologies and thought processes of the humanities and social sciences. Provision must also be made to develop each student's capability to communicate adequately, both orally and in writing.

ii) Language courses must be included within complementary studies provided they are not taken to fulfil an admission requirement. However, course content should be used to satisfy the requirements for subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences.

iii) The entire programme must include a minimum of 3,400 AU. It is expected that accredited programmes will continue to have additional AUs to demonstrate innovation and to achieve the special goals that particular engineering school may have for an education in engineering.

iv) Appropriate laboratory and workshop experience must be an integral component of the engineering curriculum. Instruction in safety procedures must be included in students' laboratory.

v) Each programme must ensure that students are made aware of the role and responsibilities of the professional engineer in society. Appropriate exposure to ethics, equity, public and workers safety and health considerations and concepts of sustainable development and environmental stewardship must be an integral component of the engineering curriculum.

vi) The curriculum prepares students to learn independently and must appropriately expose them to engineering research and development or other innovative engineering activities.

The academic curriculum and curricular design shall strongly reflect the philosophy and approach adopted in the programme structure, and the choice of the teaching-learning (delivery) and assessment methods. The curricular approach, the educational content and the teaching-learning and assessment methods shall be appropriate to, consistent with, and support the attainment or achievement of the POs.

A balanced curriculum shall include all technical and non-technical attributes listed in the POs, and there shall be a balance between the essential elements forming the core of the programme and additional specialist or optional studies (electives). The curriculum shall integrate theory with practice through adequate exposure to laboratory work and professional engineering practice.

Guidelines on academic programmes outlined in this Standard provide essential elements and features, which when combined will render a programme acceptable for accreditation by the EAC- Kenya.

All engineering programmes need to cover the broad areas of their respective disciplines. Appendix A of this Standard provides list of most courses that the broad areas of the respective traditional programmes. Appropriate breach and depth of the content shall be ensured for all courses. The course structure and sequence of content shall be appropriate. Adequate time shall be allocated for each component of the content/course. Evidence shall be presented to show that the contents are being updated to keep up with scientific, technological and knowledge developments in the field, and to meet societal needs. IHLs shall have mechanisms for regularly identifying topics of contemporary importance at local, national and global levels and topics that may not be adequately addressed in the curriculum.

Other contributing components to the curriculum such as a variety of teaching- learning (delivery) modes, assessment and evaluation methods shall be designed, planned and incorporated within the curriculum to enable students to effectively develop the range of intellectual and practical skills, as well as positive attitudes that are constructively aligned with the PEOs and POs. The assessment to evaluate the degree of the achievement of the POs of the programme shall be done and its level of attainment recorded. The assessment of POs and the Course Outcomes (COs) by the students may also be done both at the programme

as well as at course levels, respectively.

The teaching- learning methods shall enable students to take full responsibility for their own learning and prepare them for life-long learning. The programme shall demonstrate the relationship between the courses and the POs.

IHLs need to consult the industry in keeping the content and outcomes up-to- date. However, they should not lose sight of the need to provide an education in engineering, which will form a sound basis for a career that is likely to see rapid changes in technology. As a general rule, it will be appropriate for the programme structure to be designed to give a progressive shift of emphasis from engineering science and principles in the early stages towards more integrated studies in the final year, in a way that will impart knowledge of application of fundamentals and provide a focus for a professional approach.

The emphasis on particular elements or features of the programme must remain flexible, but it will be required in the accreditation process to confirm that minimum levels of understanding and standards of achievement are attained in the basic courses relevant to the fields of engineering.

The essential elements and features are identified for convenience under several hearings, without implying that each is to be treated as a separate or isolated component. In general, the syllabus and curriculum content must be adequate in quality and quantity in terms of coverage and depth.

Emphasis on the curriculum shall be placed on the understanding and acquisition of basic principles and skills of a discipline, rather than memorization of details and facts. The curriculum shall also provide students with ample opportunities for analytical, critical, constructive, and creative thinking, and evidence-based decision making in dealing with complex engineering problems. The curriculum shall include sufficient elements for training students in rational thinking and research methods.

Typical core contents for selected traditional engineering disciplines and the curriculum shall encompass the **Complex Problem Identification and Solving, Complex Engineering Activities** and **Knowledge and Atribute Profile,** as summarized in section (e), (f) and (g) in Appendix A of

this Standard.

Notes

i) Tutorial

Tutorial can be part of the programme so as to complement the lectures. A tutorial session should preferably not exceed 30 students at any one time.

ii) Laboratory Work

Students should receive sufficient laboratory work to complement engineering theory that is learnt through lectures. The laboratory should help students develop competence in executing experimental work. Students should work in groups, preferably not more than five (5) in a group. It is expected that a significant number of laboratory works shall be open- ended with clear COs and POs. Throughout the programme, there should be adequate provision for laboratory or similar investigative work, which will develop in the future engineer the confidence to deal with complex engineering problems.

iii) Industrial Training

Exposure to professional engineering practice is a key element in differentiating an engineering degree from an applied science degree. Familiarity with all common engineering processes is essential and exposure at a practical level to a wide variety of processes is required at a level appropriate to the young professional. Whilst it is clearly desirable for students to get a feel of the skills involved, the central aim of the Industrial Training is to achieve appreciation and/or capability of carrying out complex engineering activities but not to acquire craft skills. Clearly, many of the latest processes and large scale or costly operations can only be the subject of observation or demonstration, and visits to engineering works may be helpful in many such cases. It

is considered that there is no real substitute for first-hand experience in an engineering-practice environment, other than exposure to the industrial environment outside the IHL. There should be a structured industrial training and supervision by qualified personnel. Industrial training is a key component of learning in an integrated academic curriculum. Due to its importance, the programme shall have a minimum of eight (8) weeks of continuous industrial training for each student.

ii) Exposure to Engineering Practice

Exposure to engineering practice shall also be integrated throughout the curriculum as it is a key component. In addition, exposure to professional engineering practice may also be obtained through a combination of the following:

- Lectures/talks by guest lecturers from industry.
- Academic staff with industrial experience.
- Courses on professional ethics and code of conduct.
- Industry visits.
- Industry-based project.
- Regular use of a logbook in which industrial experiences are recorded.

iii) Final-Year Project

The final-year project should preferably be industry related, and can provide one of the best means of introducing an investigative research-oriented approach to engineering studies. It is a requirement of the programme to include a significant project in its later stages. The final-year project is required to seek individual analysis and judgement, capable of being assessed independently. The student among others is expected to develop techniques in literature review and information processing, as necessary with all research approaches. It is recommended that final-year projects should also provide opportunities to utilize appropriate modern technology in some aspects of the work,

emphasizing the need for engineers to make use of computers and multimedia technology in everyday practice.

iv) **Integrated Design Projects**

Integrated Design Projects (IDP) shall involve complex engineering problems and design systems, components or processes integrating (culminating) core areas and meeting specified needs with appropriate consideration for public health and safety, cultural, societal, project management, economy, and environmental considerations where appropriate. The IDPs are multifaceted assignment that serves as a culminating academic and intellectual experience for students, typically towards the end of an academic programme or learning-pathway experience. The IDP should involve students working in group. The programme should seize the opportunity to deliver and assess many relevant POs through the Integrated project.

v) **Condition for Passing Courses**

The IHLs must ensure that no students shall pass a course if they fail in their final examination of that course, unless the continuous assessment approach adopted can demonstrate the attainment of the depth of knowledge.

3.2.3 Criterion 3 – Faculty Staff Establishment

The character of the educational experience is influenced strongly by the engineering competence and outlook of the faculty. The faculty devoted to the programme must be large enough to cover, by experience and interest, all of the curricular areas of the programme. Even though a faculty may include full-time and part-time members, there must be a sufficient number of full-time faculty members to ensure adequate levels of students-faculty interaction, student counselling and faculty participation in the development, control and administration of the curriculum. Faculty teaching loads should allow time for adequate participation in research and professional development activities. Under no circumstances should a

programme be critically dependent on one individual. The engineering faculty must assume the responsibility of assuring that students receive proper curricular and career counselling.

The Dean of Engineering (or equivalent officer) and the Chair of an engineering department (or equivalent officer) are expected to provide effective leadership in engineering education and to have achieved a high standing in the engineering community. They are expected to be professional engineers registered as Professional Engineers by the Engineers Board of Kenya. Faculty teaching courses in the engineering curriculum are expected to have high level of competence and to be dedicated to the aims of engineering education. The overall competence of Faculty is judged by such factors as the level of academic education and its members, the diversity of their backgrounds, the nature and extent of their non-academic experience, their ability to communicate effectively, their scientific and professional publications, their degree of participation in the profession, scientific and learned societies and their special interest in the students' curricular and extra-curricular activities. Where applicable their dedication to the profession is expected to be reflected in their registration as professional engineers and graduate engineers in Kenya. Faculty teaching courses which are primarily engineering science and engineering design are expected to be taught by registered professional engineers in Kenya.

The Engineering Faculty Board (or equivalent) must have effective control over programmes administered by another faculty.

A viable engineering programme is expected to have a minimum of 8 full-time academic staff relevant to the particular engineering discipline. All academic staff teaching engineering subjects **must** be registered with EBK. Every programme shall have a minimum of three (3) full-time Professional Engineers registered with the EBK and actively teach in the programme. For programmes with a total student enrolment exceeding 160, at least 30 percent of the actively teaching engineering academic staff shall be registered with the EBK as Professional Engineers.

In addition, IHLs may engage part-time staff with acceptable professional qualifications in the related engineering fields. Numbers of part time staff recruited shall not exceed 40% of the total staff. Academic staff shall have postgraduate degrees (Masters level or higher). However, a staff member with a recognized first degree and long industrial/specialist experience with acceptable professional qualifications may be considered.

It must be demonstrated that the academic staff have the competencies to cover all areas of the programme, and are implementing the outcome-based approach to education. The overall competence of the academic staff may be judged by such factors as education, diversity of background, engineering experience, teaching experience, ability to communicate, enthusiasm for developing more effective programmes, level of scholarship, participation in professional societies and attainment of Professional Engineer status. The IHL should ensure its staff gain the necessary industrial experience required to achieve professional status.

The full-time equivalent academic staff to student ratio shall ideally be 1:25 or better to ensure effective teaching, student-staff interaction, student advising and counselling, IHL service and research activities, professional development and interaction with industry.

There shall also be sufficient, qualified and experienced technical and administrative staff to provide adequate support to the educational programme. It is recommended that each technical staff shall be in charge of not more than two laboratories.

3.2.4 Criterion 4 – Institutions Training Facilities and Infrastructure

The applying institution shall demonstrate that at a minimum it has:

i) Suitable and adequate learning venues where the programme is offered, including lecture halls, laboratories, workshops and sufficient library resources.

ii) There are safety and health policy and guidelines especially with respect to laboratory and workshop practice.

iii) Suitable and sufficient IT infrastructure is available as determined by the nature of the programme. This includes functionally appropriate hardware (computers and printers), software (programmes) and databases. The infrastructure should be properly maintained and continuously upgraded and adequate funds are available for this purpose. Students and staff are trained in the use of the technology required for the programme.

The quality of the environment in which the programme is delivered is regarded as paramount to providing the educational experience necessary to accomplish the POs. There must be adequate teaching and learning facilities such as classrooms, learning-support facilities, study areas, information resources (library), computing and information-technology systems, laboratories and workshops, and associate equipment to cater for multi-delivery modes.

Sufficient and appropriate experimental facilities must be available for students to gain substantial experience in understanding and operating engineering equipment and of designing and conducting experiments. The equipment must be reasonably representative of modern engineering practice. Where practical work is undertaken at another institution, or in industry, arrangements must be such as to provide reasonable accessibility and opportunity for learning. IHLs must ensure that all facilities are maintained and adhered to best practices in safety, health and environment where appropriate.

The IHL shall comply with any or all applicable rules or regulations pertaining to safety, health and environment. For programmes offered wholly or partly in distance mode, or at multiple or remote locations, facilities must be sufficient to support student learning, equivalent to those provided for on-campus students. Support facilities such as hostels, sport and recreational centers, health centers, student centers, and transport must be adequate to facilitate students' life on campus and to enhance character building.

3.2.5 Criterion 5 – Duration of Training

The Institution must ensure that a degree programme leading to the award of an engineering degree shall be five (5) years covering the curriculum approved by EAC- Kenya.

3.2.6 Criterion 6 – Quality Assurance System

The Institution applying for accreditation of its engineering programme(s) must demonstrate that a quality assurance system is in place to assure the achievement of programme outcomes and to provide for continuous improvement of its systems and processes.

The IHL and the faculty must ensure that there exists a quality management system to oversee and monitor the overall achievement of the PEOs and POs. These include the controlling, managing, directing, organizing and supervising of the overall management system of the IHL. It must have adequate arrangements for planning, development, delivery and review of engineering programmes together with the academic and professional development of its staff.

3.6.2.1 Institutional Support, Operating Environment, and Financial Resources

The IHL must regard quality engineering education as a significant and long- term component of its activity. This would most commonly be reflected in the IHL's vision and mission statements and strategic plans. In addition, institutional support may be reflected in the constructive leadership, adequate policies and mechanisms for attracting, appointing, retaining and rewarding well-qualified staff and providing for their ongoing professional development; and for providing and updating infrastructure and support services. It must ensure that creative leadership is available to the IHL through the appointment of highly qualified and experienced senior staff in sufficient numbers.

The development of academic staff, in particular, through opportunities for further education, industrial exposure, as well as research and development, is of utmost importance for the sustainability and quality improvement of the programme. Opportunities for the development of support staff should also be provided. The IHL shall provide sound policies, adequate

funding and infrastructure for this purpose. Financial resources must be adequate to assure the overall quality and continuity of the engineering programme. The IHL must have sufficient financial resources to acquire, maintain, and operate facilities and equipment appropriate for the engineering programme.

3.6.2.2 Programme Quality Management and Planning

The IHL's processes for programme planning, curriculum development, and regular curriculum and content review must involve all academic staff. The processes include reviewing PEOs and POs, tracking the contributions of individual Course Outcomes (COs) to the POs, tracking performance assessment processes, reviewing the comments from External Examiner/Advisor, reviewing feedback and inputs from stakeholders.

The process of continual quality improvement shall be implemented with full accountability. The IHL must demonstrate appropriate benchmarking is carried out with similar accredited/recognized programme(s) offered at other IHLs. For a new programme, the processes surrounding the decision to introduce the programme should be established. Programme(s) via various modes and at different locations, such as, full-time, franchised, twinning, part-time, distance learning, joint degree and multi campus may be conducted. The IHL awarding the degree shall be responsible for ensuring the quality and management of these programmes.

3.2.6.3 External Assessment and Advisory System

The IHL shall have an external examiner for each programme to independently review the overall academic standard. Appendix C provides a guideline for the content of the report. The external examiner shall be a person of high academic standing in the engineering discipline and a professional engineer registered by the Board. The external examiner/advisor is expected to carry out the overall assessment of the programme including staff as well as all courses and

laboratory work undertaken by the students. Evaluation is to be made at least once in one academic year.

The IHL shall have an industry advisory panel for participation by practicing engineers, alumni and employers of engineers for the purpose of planning and continuous improvement of programme quality. The advisory body should be specific for the programme, so that the IAP can provide input specific to the programme. The number of IAP members should be appropriate so that the IAP can bring about improvement to the programme. These industry advisors shall be expected to provide inputs and recommendation on an on-going basis through participation in discussion and forums. The IHL should leverage on the IAP for teaching and learning activities.

The external examiner **report** and feedback from industry advisors shall be used for continual quality improvement.

3.2.6.4 Quality Assurance

A quality management system must be in place to assure the achievement of Programme Outcomes. The IHL shall maintain its quality management system, based on an established quality assurance standard, for example, ISO:9001 Quality Management System, or other quality assurance systems and benchmarking. The quality assurance processes should include, among others:

a) Student admission including AU and course transfer/exemption.

b) Teaching and learning.

c) Programme and curriculum review

d) Assessment and evaluation which include:

- examination regulations and criteria for pass/fail
- preparation and moderation processes

- level of assessment
- assessment processes including final year project/industrial training.

3.2.7 Criterion 7 - Students

The quality and performance of students, in relation to the POs is of utmost importance in the evaluation of an engineering programme. Students intending to pursue engineering programmes shall have a good understanding of mathematics and natural sciences. The normal entry qualification is KCSE minimum aggregate grade of C+, obtained at least a C+ in English/Kiswahili and a minimum C+ in each of the following subjects: Mathematics, Physics and Chemistry.

IHLs shall ensure that students, who do not meet the above criteria, undertake suitable remedial programmes in order to attain the equivalent entry qualification. IHLs must put in place clear policies and mechanism for Credit Exemption/Transfer to allow alternative educational pathways.

Credit Exemption/Transfer may be done in two (2) categories as follows:

i. Credit and Course Exemption from lower to higher level, i.e. accredited/recognised Diploma to Bachelor degree.
ii. Credit Transfer between accredited/recognised programmes of same level, i.e. from Bachelor to Bachelor degree.

The programme shall provide the necessary teaching-learning environment to support the achievement of the PEOs and POs. The teaching-learning environment shall be conducive to ensure that students are always enthusiastic and motivated.

The IHL shall provide necessary counselling services to students regarding academic, career, financial, and health matters.

The programme should demonstrate the necessary avenues for students to get their feedback and suggestions on improving the programme such as committee, forum, feedback services, and so on.

Students shall not be over burdened with workload that may be beyond their ability to cope with. However, adequate opportunities, such as involvement in co-curricular activities in student clubs, competitions, sports and campus activities shall be provided for students to develop their character apart from academic development.

CHAPTER FOUR

4.0 ACCREDITATION DOCUMENTS

4.1 New Programme (First-cycle) or New-cycle Accreditation or Approval of New Programme

The IHL applying or reapplying (in deferment case) for accreditation of new programme (first-cycle) or new-cycle accreditation, or approval of new programme, must submit documents that provide accurate information and sufficient evidence for the purpose of evaluation.

It should not be necessary to develop extensive documentation specifically for accreditation evaluation, since the purpose of accreditation is to evaluate the systems already in place. For each application, unless otherwise stated, the IHL shall submit through the Accreditation Management System (AMS) the following documents:

i. A completed Self-Assessment Report (SAR) (see 4.3)
ii. Supporting and other relevant Documents
iii. A completed Appendix B (Checklist of Documents for Accreditation/Approval of New Programme and Relevant Information).

Institutional Documents and Additional Documentation (as noted in Section 4.5) are to be made available during the visit.

4.2 Limited Term Accreditation/ Interim Accreditation

For programme that has been accorded accreditation with interim conditions, or programme applying for extension of accreditation in the same cycle, unless otherwise stated, the IHL shall submit through the Accreditation Management System (AMS) the following documents:

(i) The earlier SAR prepared for previous accreditation visit

(ii) An addendum to the SAR. The addendum shall include:

- Report related to concerns listed under accreditation conditions. Self-assess the closing of concerns, substantiated with evidences of actions taken to close the concerns, and results achieved from the actions. It summarizes the closing of concerns

in a tabular form.

- Updates on the fulfilment of the eight (8) Qualifying Requirements.
- Report of how the programme is addressing (closing the gap) newly introduced/revised accreditation requirements by the EAC- Kenya (if any).
- Updates on any changes in information, data, statistics, status, policies, etc., and report on Continual Quality Improvement (CQI) activities related to the six (6) accreditation criteria. These may involve for example change of programme name, PEO or PO statements, OBE model, academic curriculum (structure or content), students' entry requirements, number of academic or support staff, number of academic staff with professional qualifications, staff student ratio, facilities, QMS.
- Report on action taken to address issues listed under Opportunity for Improvement (OFI) in the previous accreditation visit with CQI being put into practice, where appropriate.
- Any other related matters to be highlighted in any section/criteria.

(iii) Supporting and other relevant Documents – Digital format.

Institutional Documents and Additional Documentation are to be made available during the visit.

4.3 Self-Assessment Report

A Self-Assessment Report (SAR) is an account of the IHL's plan, implementation, assessment and evaluation of the programme conducted. It reflects the processes with results obtained used in continual quality improvement at all levels of the programme's activities.

This document, ranging between 50 – 100 pages with all pages numbered and a table of contents, shall provide the self-evaluation of the outcomes and subsequent corrective actions including the information and description about the programme to enable the Evaluation Panel to objectively assess the programme for accreditation or approval. The emphasis shall be on qualitative description of each aspect and criterion, and how these meet the standards

and expectation as set out in this Standard. In other words, this summary document is a form of self-assessment of the IHL's programme outcomes attainment.

The SAR shall be structured according to section 4.3.2 to 4.3.7. Appendix E provides samples of formats for tabulation of information.

Supporting documents/evidences related to the SAR write-up on all the criteria should be provided. These can include (but not limited to those items in Appendix B

The submission must be comprehensive, reachable, self-contained and provide a coherent overview with the text addressing each major point in a definitive manner. It must be concise with sufficient depth and detail in conjunction with the supporting information to appropriately represent the programme. It will not be sufficient to merely provide a collection of disparate items, or point to a web site, and requiring the EAC- Kenya to find the relevant information.

The IHL is advised to provide accurate information as required by this Accreditation Standard, for verification by the Evaluation Panel during the visit.

4.3.1 General Information (Appendix B, section A & B)

i) Provide general information on the IHL and the specific programme.

ii) Provide detailed information on programme history of accreditation (year of accreditation, conditions imposed and actions taken).

iii) Describe any changes made to the programme and state the year the changes were introduced.

4.3.2 Programme Design

4.3.2.1 *Programme Educational Objectives (PEOs)*

i) State the vision and mission of the IHL and/or faculty.

ii) List the PEOs and state where they are published or publicized.

iii) Describe how the PEOs are consistent with the vision and mission of the IHL and/or faculty and stakeholders' requirements.

iv) Describe the process used to establish /formulate/define and review PEOs

v) Describe the definition or PEO elements/performance indicators, achievement criteria, and performance targets.

vi) Describe the PEOs development and assessment processes including but not limited to:

a. Performance indicators
b. The assessment instruments
c. Their achievements
d. CQI activities
e. Stakeholders involvement

vii) Self-assess on programme performance related to PEOs based on the following scale (with justifications) Satisfactory/Unsatisfactory

4.3.2.2 Programme Outcomes (POs)

i) List down the POs and state where are they published.

ii) Describe how the POs relate to the PEOs.

iii) Describe how the POs are developed; how they encompass and are consistent with the PEOs.

iv) Describe the PO definition or elements /performance indicators

v) Describe the processes used to establish/formulate, define PO elements/performance indicators, and review the PO statements. This includes describing the tools used in the processes (survey, meetings, interviews, etc.) and frequency of activities and timelines

vi) Describe the OBE model adopted to deliver, assess and evaluate achievement of the POs. Highlight how direct assessments (as primary evidence) of the achievement of the POs by the students are reached. Give example on how the assessment from related COs from various courses that are mapped to a particular PO are used in determining the achievement of the POs by the students, i.e. elaborate on the POs achievement criteria and performance targets

vii) Describe the PO assessment model adopted by indicating:

a. Where each of the PO is assessed

b. How each of the PO is assessed

c. What is the satisfactory attainment and measures to overcome any shortcomings

viii) Describe CQI strategies implemented in relation to POs.

ix) Self-assess on programme performance related to POs based on the following scale (with justifications): *Satisfactory/Unsatisfactory

4.3.3 Programme Curriculum Content

i) Describe the programme structure and course contents to show how they are appropriate to, consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the POs.

ii) Describe the programme delivery and assessment (include description of assessment rubrics for projects, case studies, etc. and non-cognitive POs) methods, methods and how these are appropriate to, consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the POs.

iii) The information required in items (i) and (ii) should include but is not limited to the following:

- A matrix linking courses to POs to identify and track the contribution of each course to the POs. IHL may adopt the sample overall 'Courses to POs' mapping matrix included in Appendix E of this Standard to identify and track the contribution of the courses to the POs as a guiding template. IHL may adopt own mapping strategy that may be different from the sample template. Table 1
- Distribution of the engineering courses according to areas specific to each programme referring to underpinning Engineering Sciences, Principles, and Applications for traditional courses (Civil, Mechanical, Electrical, Chemical and Electronics) of Appendix A and areas obtained from benchmarking exercises with established programme elsewhere for non-conventional programmes. Table 2
- Mapping of the courses to the Knowledge Profile in Appendix A.
- Distribution of the related non-engineering (general education) courses. Table 4
- Distribution of the courses offered according to semester. Table 5

(**Note**: Samples of table formats are available in Appendix E).

iv) Describe how benchmarking report/s and other feedback (from EAC- Kenya, Industry Linkages, External Examiner, etc.) have resulted in Academic Curriculum improvement.

v) Describe how the requirements of Complex Problem Solving) and Complex Engineering Activities (CEA) have been addressed.

vi) Describe laboratory exercises, related POs, and approach to deliver and assess. Give examples of open-ended laboratory activities.

vii) Describe industrial training scheme and relate it to POs using appropriate examples.

viii) Describe exposure to professional practice and relate it to POs. Cite examples of exposure to professional practice activities.

ix) Describe Final Year Projects (FYPs), related POs, and how FYPs fulfil the specific requirements stipulated in the Standard.

x) Describe Integrated Design Projects, related POs, and how the projects fulfil the specific requirements stipulated in the Standard.

xi) Describe the 'Condition for Passing Courses' practice(s).

xii) Describe the extent to which the programme's various stakeholders are involved in the curriculum development and review process.

xiii) Describe CQI strategies to be implemented in relation to Academic Curriculum.

xiv) Self-assess on programme performance related to Academic Curriculum based on the following scale (with justifications): *Poor/Satisfactory/Good

4.3.4 Faculty Staff Establishment – Workload per semester for the Lecturers

i) Discuss the adequacy and competencies of the academic staff in covering all areas of the programme, and in implementing the Outcome-based approach to education. The overall competence of Academic staff is viewed from their diversity of background, academic qualification, academic and professional practice experiences, including their track record in teaching, research, publications, administration and service to the society, ability to communicate, enthusiasm for developing more effective programmes, level of

scholarship, participation in professional societies and attainment of Professional Engineer status.

ii) Discuss how the overall staff workload enables effective teaching, student-staff interaction, student advising and counselling, IHL service and research activities, professional development and interaction with industry.

iii) Discuss the sufficiency and competency of technical and administrative staff in providing adequate support to the educational programme.

iv) The information required in items (i) to (iii) should include but is not limited to the following (Appendix E):

a) A breakdown in terms of numbers of academic staff (full-time, part- time and inter-programme - Table 8

b) An analysis of all academic staff -Table 9

c) A summary of the academic qualifications of academic staff -Table 10

d) A summary of the professional qualifications and membership in professional bodies/societies of academic staff This shall also include registration with the Engineers Board of Kenya in line with the requirement. -Table 11

e) A summary of the posts held by full time academic staff - Table 12

f) A summary of teaching workload of academic staff for the current semester - Table 13

g) An analysis of all support staff – Table 14

h) A summary of the posts held by support staff -Table 15

i) The staff: student ratio by year for all academic years for the past five years. - Table 16

j) A listing of lecturers/invited speakers from industry/public bodies and their level of involvement.

v) Describe the implemented professional training scheme and incentives for academic

staff. List down academic staff who have undergone or still undergoing training. Provide future projected professional training programme.

vi) Describe participation of academic staff in consultancy activities.

vii) Describe participation of academic staff in research and development activities.

viii) Describe CQI strategies to be implemented in relation to Academic and Support Staff.

ix) Self-assess on programme performance related to Academic and Support Staff based on the following scale (with justifications): *Poor/Satisfactory/Good

4.3.5 Institutions Training Facilities and Infrastructure

i) Discuss the adequacy of teaching and learning facilities such as classrooms, learning-support facilities, study areas, information resources (library), computing and information-technology systems, laboratories and workshops, and associated equipment to cater for multi-delivery modes.

ii) For programmes offered wholly or partly in distance mode, or at multiple or remote locations, describe how the facilities provided are equivalent to those provided for on-campus students.

iii) Describe the adequacy of support facilities such as hostels, sport and recreational centres, health centres, student centres, and transport in facilitating students' life on campus and enhancing character building.

iv) The information required in items (i) to (iii) should be provided in the supporting documents but is not limited to the following:

a. A summary, in tabulated form, of the lecture facilities (give number, capacity, and audio video facilities available).

b. A summary, in tabulated form, of the laboratories (list down the equipment available in each laboratory).

c. A summary, in tabulated form, of the workshops (list down the equipment/machinery available in each workshop).

d. A summary, in tabulated form, of the computer laboratories (list down the hardware

and software available).

e. A summary, in tabulated form, of the other supporting facilities such as the library (list down the titles of books/journals/magazines/ standards of relevance to the programme).

f. A summary, in tabulated form, of recreational facilities.

g. A summary, in tabulated form, of information on recent improvements and planned improvements in these facilities.

v) Describe procedures and monitoring of health, safety and environmental aspects of facilities including lecture halls, laboratories, equipment, etc.

vi) Describe maintenance and calibration aspects of teaching facilities and equipment/apparatus.

vii) Discuss how the safety, health and environment issues being managed by the IHL.

viii) Describe CQI strategies to be implemented in relation to Facilities.

ix) Self-assess on programme performance related to Facilities based on the following scale (with justifications): *Satisfactory/Unsatisfactory

4.3.6 Duration of Training

i) Describe the duration of training for the programme

4.3.7 Quality Assurance Systems

(i) Describe the Quality Management Systems and organizational structure of the IHL as well as the structure within the faculty/department/ programme. Discuss the commitment and level and adequacy of institutional support, operating environment, financial resources, constructive leadership, policies and mechanisms for attracting, appointing, retaining and rewarding well-qualified staff and provision of professional development, and provision of infrastructure and support services to achieve the PEOs and POs and assure continuity/sustainability of the programme. All relevant policies are to be made

available during the visit.

(ii) Discuss the mechanism for the following: programme planning; curriculum development; curriculum and content review; responding to feedback and inputs from all stakeholders monitoring the contribution of individual courses to the POs; monitoring outcomes of performance through assessment; responding to External Examiners comments; reviewing of PEOs and POs; and Continual Quality Improvement (CQI). Where these are discussed elsewhere in the report, specify their locations. For a new programme, the IHL also needs to discuss the processes surrounding the decision to introduce the programme.

(iii) Summarize feedback obtained from External Examiner/Advisor, IAP and stakeholders and how CQI was carried out.

(iv) Summarized benchmarking reports and how CQI was carried out.

(v) Describe how the Quality Management System (QMS) of the IHL provides quality assurance covering (not limited to) the following:

- System for Examination Regulations including Preparation and Moderation of Examination Papers: The programme has established a working system for examination regulations including preparation and moderation of examination papers.
- System of Assessment for Examinations, Projects, and Industrial Training: The programme has established a working system for assessment of examinations, projects, industrial training and other forms of learning delivery. The scope of assessment is wide enough to cover the achievement of POs.
- System for student admission and teaching and learning: The programme has established a working system for student admission and teaching and learning.

Quality assurance can be reflected through proper and sufficient policies/ rules/regulations/procedures in the Department/Faculty or IHL, and whether those systems are implemented.

(vi) Describe the management system for safety, health and environment.

(vii) Describe CQI strategies to be implemented in relation to QMS

(viii) Self-assess on programme performance related to Quality Management Systems (QMS) based on the following scale (with justifications): *Satisfactory/Unsatisfactory

4.3.8 Students

(i) Describe the requirements and process for admission of students to the programme.

(ii) Describe the policies and processes for credit transfer/exemption.

(iii) Describe students' counselling services available.

(iv) Describe formal or informal feedback platform/channel to obtain students feedback and suggestions for further programme improvement, and how have the feedback resulted in programme improvement.

(v) Describe students' workload.

(vi) Describe students' activities and involvement in student organizations and relevant professional engineering bodies that provide experience in management and governance, representation in education and related matters and social activities.

(vii) The information required in items (i) to (vi) should include but is not limited to the following:

- The distribution of students' enrolment for all academic years for the past five years (Table 6 in Appendix E).
- The entry qualifications of final year students of the current semester (Table 7 in Appendix E).

(viii) Discuss students' performances in relation to POs from overall holistic perspective involving both curricular and co-curricular activities, such as participating in design competitions, public speaking activities, etc.

(ix) Describe CQI strategies to be implemented in relation to Students.

(x) Self-assess on programme performance related to Students based on the following scale (with justifications): *Poor/Satisfactory/Good

4.4 Other Relevant Information

Include additional information which supports the continuing progress and visibility of the programme, such as major research accomplishments.

4.5 Supporting Material Document – Digital Format

The supporting documents are evidence to substantiate claims made in the SAR by IHL. These documents are to be submitted in digital format as Appendices to the SAR.

4.6 Institutional Documents and Additional Documentation to be Made Available during the Visit – Hard Copy.

The Institutional Documents and Additional Documentation shall be made available during the visit in hardcopies or other tangible forms. They are to support the information/evidences requested in Chapter 4, Sections 4.3 and 4.5 for verification purposes by the Evaluation Panel. These documents are either hardcopies of the supporting documents already provided by the IHL during the SAR submission digital format, or additional documents to further support the supporting documents, or evidences not submitted with the SAR but to be viewed during the visit. These may include:

i) The IHL/programme's handbook, undergraduate prospectus, academic calendar or other official publications relating to the faculty/school/department, and containing the statement of programme details; IHL prospectus; and any other documents that relate to the faculty/school/department, and programme.

ii) Completed questionnaire survey forms.

iii) Documents related to IAP activities.

iv) Documents related to training workshops related to OBE and Curriculum development.

v) OBE user manual.

vi) PO trays/boxes for each of the 11

vii) EAC- Kenya's POs.

viii) OBE management software (if any).

ix) Course files – for every course offered by the programme, provide the course information to include the targeted course learning outcomes, a matrix linking course outcomes to programme outcomes, course synopsis/syllabus, and a list of references (texts used). Examination papers complete with answer scheme and graded examination papers with low, medium and high grades are also to be provided. Any information with regard to other learning activities and assessment measures such as projects, quizzes, tutorial questions, assignments, class projects, copies of the course notes, and any other materials used for the course are also to be included. Sample of projects with low, medium and high grades are also to be provided. Assessment rubrics or projects and non-cognitive outcomes shall be included.

x) Final year project reports and assessment rubrics.

xi) Integrated design projects and assessment rubrics.

xii) Moderation forms for examination papers and other continuous assessments.

xiii) Laboratory exercises to include experiment instruction sheets, as well as supporting information, and marked laboratory exercises.

xiv) Laboratory reports.

xv) Documents related to industrial training (IT)/placement and students' IT report.

xvi) Documents related to industrial exposure for students (industrial visit, talks, etc.).

xvii) Documents related to students' feedback.

xviii) Documents related to students' participation in design competition, public speaking activities, etc.

xix) Documents related to industrial attachment/professional scheme for academic staff.

xx) Documents related to academic staff attending training, conferences and workshops.

xxi) Documents related to support staff training.

xxii) Documents related to staff industry linked consultancy activities.

xxiii) Documents related to staff industry linked research activities.

xxiv) Documents related to staff promotion exercises.

xxv) Equipment calibration records.

xxvi) Facilities and equipment maintenance records.

xxvii) Documents related to health, safety, and environment.

xxviii) IHL/programme annual report.

xxix) Published policies.

xxx) External Examiner/Advisor report.

xxxi) Benchmarking reports.

xxxii) Minutes of meetings involving all criteria.

xxxiii) Other relevant documentation/evidence

LIST OF APPENDICES

Appendix A - Engineering Content for the Main Branches and Innovative Programmes

Appendix B - Checklist of Documents for Accreditation*/Approval of New Programme and Relevant Information

Appendix C - Evaluation Panel Report

Appendix D - External Examiner/Advisor Report

Appendix E - Sample Table Templates for SAR

Appendix F – Conversion of AUs to Credits

Appendix G- Code of Ethics and Conducts for Programme Evaluators

Appendix H- Code of Ethics and Conducts for Observes

APPENDIX A: ENGINEERING CONTENT FOR THE MAIN BRANCHES AND INNOVATIVE PROGRAMMES

a(i) Engineering Science and Principles for Main Branches

An accredited programme is expected to cover the broad areas of the respective disciplines at an appropriate level. The following are the areas to be considered for the respective traditional programmes/disciplines programmes:

CIVIL	MECHANICAL	ELECTRICAL	CHEMICAL	AGRICULTURAL
• Strength of Materials	• Materials	• Circuits and Signals	• Chemical Thermo-dynamics	• Post harvest food and bu-products processing industry
• Structural Analysis and Design	• Statics and Dynamics	• Electromagnetic Fields and Waves	• Material and Energy Balance	• Farm Power and Machinery Engineering,
• Fluid Mechanics/ Hydraulics	• Fluid Mechanics	• Instrumentation and Control	• Chemical Kinetics and Reactor Design	• Soil and Water
• Soil Mechanics/ Geotechnical Engineering	• Thermo-dynamics and Heat Transfer	• Digital and Analogue Electronics	• Momentum Transfer	• Farm Structures
• Civil Engineering Materials	• Mechanical Design	• Machines and Drives	• Heat Transfer	• Irrigation and water resources management industries
• Statics and Dynamics	• Instrumentation and Control	• Power Electronics	• Mass Transfer	• Environmental and Social Impact Assessment

• Construction Engineering	• Vibrations	• Electrical Power Generation and High Voltage Engineering	• Separation Process	• Food Engineering
• Surveying	• Solid Mechanics	• Communication s System	• Process Design	• Renewable Energy Industries
• Water Resources and Hydrology	• Manufacturing/ Production	• Power System Analysis	• Process Control and Instrumentation	
• Highway and Transportation	• Electrical Power and Machines	• Electronic Drives and Applications	• Safety and Environmental Protection	
• Environmental Studies	• Electronics and Micro-processors	• Electrical Energy Utilization	• Environmental Studies	
	• Computer Aided Engineering		• Plant, Equipment Design, and Economics	

a (ii) Engineering Applications

Emphasis on engineering applications in degree programmes aims to ensure that all engineering graduates have a sound understanding of up-to-date industrial practice, in particular:

Civil Engineering:

i) To appreciate the characteristics and structural behaviour of materials in a variety of user environments.

ii) To be able to analyze and design structural components from these materials.

iii) To appreciate the range of construction technology currently available and the skills which they require in people for their use.

iv) To appreciate the cost aspects of material selection, construction methods, operation and

maintenance in their interaction with design and the delivery of civil engineering facilities and services.

v) To understand the whole process of industrial decision-making in design, manufacturing and use and how it is influenced not only by technical ideas but also by the practical constraints of financial and human resources as well as the business and social environment of engineering.

Mechanical Engineering:

i) To appreciate the characteristic behaviour of materials in a variety of user environments.

ii) To appreciate the range of manufacturing systems and industry systems energy currently available and the skills which they require in people for their use.

iii) To appreciate the cost aspects of material selection, manufacturing methods, operation and maintenance in their interaction with design and product marketing.

iv) To understand the whole process of industrial decision-making in design, manufacturing and use and how it is influenced not only by technical ideas but also by the practical constraints of financial and human resources as well as the business and social environment of engineering.

Electrical and Electronic Engineering:

i) To appreciate the characteristic behaviour of materials in electrical and electronic systems.

ii) To be able to analyze and design electrical and electronic systems from devices/components made of various materials.

iii) To understand the concepts of generation, transmission and distribution of low and high voltage power.

iv) To appreciate cost effectiveness and energy consumption of component/device equipment selection, manufacturing process and integration process.

v) To appreciate the range of manufacturing methods currently available and the skills which they require in people for their use.

vi) To understand the whole process of industrial decision making in design, manufacturing and use and how it is influenced not only by technical ideas but also by the practical constraints of financial and human resources and by the business and social environment of engineering.

Chemical Engineering

i) To appreciate the physical/chemical characteristics and properties of materials.

ii) To be able to adopt these materials in process design and analysis.

iii) To be able to apply chemical engineering principles to convert these materials to desirable products through process design and development

iv) To understand the general sequence of processing steps for any given type of chemical process.

v) To understand the selection or estimation of process operating conditions, selection of process equipment, maintenance and process troubleshooting.

vi) To analyse the various types of unit operations and process equipment and to decide their relative advantages or disadvantages on the basis of environment, economics, safety and operability.

vii) To understand the various process control schemes for the purpose of maintaining optimal process and plant operation, ensuring plant safety and appropriate handling of waste products.

b. Mathematics, Statistics and Computing

These courses should be studied to a level necessary to the engineering courses of the programme accordingly and with a bias towards application. The use of numerical methods

of solution is encouraged, with an appreciation of the power and limitations of the computer for modelling engineering situations. Wherever practicable, it is preferred that mathematics, statistics and computing are taught in the context of their application to engineering problems and it follows that some mathematical techniques may be learnt within other subjects of the course. In addition to the use of computers as tools for calculation, analysis and data processing, the programme should introduce their application. in such area as given in the following table:

CIVIL	MECHANICAL	ELECTRICAL	CHEMICAL	AGRICULTURAL
Computer Aided Analysis and Design	Computer Aided Design and Manufacture	Mathematical Applications	Computer Analysis and Design	
Economics Analysis for Decision Making	Economics Analysis for Decision Making	Statistical and Numerical Techniques	Economics Analysis for Decision Making	
Databases and Information Systems	Databases and Information Systems	Computer Applications	Numerical Methods and Optimization	
Operational Research	Operational Research		Operational Research	
Business and Management Systems	On-line Control of Operations and Processes		Databases and Information Systems	
Statistical and Numerical				

Techniques				

c. **Evaluating non-Traditional or Innovative Programme**

It is a challenge for an accreditation process to promote innovation, experimentation and dissemination of good practice, while maintaining standards that can be objectively certified nationally and internationally. Innovation by its nature challenges existing wisdom, but not every programme that departs from existing norms can be said to be innovative or desirable. **All fundamentals required in the programme must be maintained**.

Since this Standard is silent on the broad or areas of these non-traditional programmes/disciplines, the IHL needs to conduct extensive Academic Curriculum benchmarking exercise with established IHLs conducting similar programme. A good External Examiner report will also help justify the adopted Academic Curriculum. The EAC- Kenya accreditation system encourages innovation by minimising prescriptiveness in how the required outcomes are attained. Programme evaluation will always focus on the intent of the criteria and on the demonstrated capability of graduates to enter engineering practice at a professional level. Clearly however, a programme which departs radically from the methods normally thought necessary – for example, by employing only a fraction of the normal complement of staff – may expect a searching examination of method as well as outcomes.

The EAC- Kenya and the Evaluation Panel are expected to be receptive to new approaches, and to use the best judgement available to evaluate the substance and merit of the programme. Continuing innovation and development can be expected to lead to restatement of the criteria and policy of accreditation.

d. **Range of Problem Identification and Solving**

The range of **complex problem solving** is defined as follows:

No.	Attribute	*Complex Engineering Problems* have characteristic WP1 and some or all of WP2 to WP7*:*
WP1	Depth of Knowledge Required	Cannot be resolved without in-depth engineering knowledge at the level of one or more of WK3, WK4, WK5, WK6 or WK8 which allows a fundamentals-based, first principles analytical approach
WP2	Range of conflicting requirements	Involve wide-ranging and/or conflicting technical, non-technical issues (such as ethical, sustainability, legal, political, economic, societal) and consideration of future requirements
WP3	Depth of analysis required	Have no obvious solution and require abstract thinking, creativity and originality in analysis to formulate suitable models
WP4	Familiarity of issues	Involve infrequently encountered issues or novel problems
WP5	Extent of applicable codes	Address problems not encompassed by standards and codes of practice for professional engineering
WP6	Extent of stakeholder involvement and conflicting requirements	Involve collaboration across engineering disciplines, other fields, and/or diverse groups of stakeholders with widely varying needs
WP7	Interdependence	Address high level problems with many components or sub-problems that may require a systems approach

e. Definition of Complex Engineering Activities

The range of **complex engineering activities** is defined as follows:

No	Attribute	Complex activities mean (engineering) activities or projects that have some or all of the following characteristics
EA1	Range of resources	Involve the use of diverse resources including people, data and information, natural, financial and physical resources and appropriate technologies including analytical and/or design software

EA2	Level of interactions	Require optimal resolution of interactions between wide-ranging and/or conflicting technical, non-technical, and engineering issues
EA3	Innovation	Involve creative use of engineering principles, innovative solutions for a conscious purpose, and research-based knowledge
EA4	Consequences to society and the environment	Have significant consequences in a range of contexts, characterized by difficulty of prediction and mitigation
EA5	Familiarity	Can extend beyond previous experiences by applying principles-based approaches

f. Knowledge & Attitude Profile

The curriculum shall encompass the **knowledge and attitude profile** as summarized in the table below:

No.	Knowledge & Attitude Profile
WK1	A systematic, theory-based understanding of the **natural sciences** applicable to the discipline and awareness of relevant **social sciences**
WK2	Conceptually-based **mathematics**, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.
WK3	A systematic, theory-based understanding of **engineering fundamentals** required in engineering discipline
WK4	Engineering **specialist knowledge** that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.
WK5	Knowledge, including efficient resource use, environmental impacts, whole-life cost, re-use of resources, net zero carbon, and similar concepts, that **supports engineering**

	design and operations in a practice area
WK6	**Knowledge of engineering practice** (technology) in the practice areas in the engineering discipline.
WK7	**Knowledge of the role** of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development
WK8	Engagement with selected knowledge in the current **research literature** of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues
WK9	**Ethics, inclusive behavior and conduct**. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes

Notes:

- A programme that builds this type of knowledge and develops the attributes listed below is typically achieved in 5 years of study, depending on the level of students at entry.
- Represented by the 17 UN Sustainable Development Goals (UN-SDG)

APPENDIX B: CHECKLIST OF DOCUMENTS FOR ACCREDITATION AND RELEVANT INFORMATION

Please tick:

Accreditation	
Approval of New Programme	

For accreditation of programme only, please fill out the table below for qualifying requirements:

A. QUALIFYING REQUIREMENTS

NO	Description of the Qualifying Requirements		
1	Outcome-based Education (OBE) Implementation.		
2	A minimum of 3400AUs of which 840 AUs are required for Mathematics and Basic Sciences, 2100AUs are attributed to Engineering Sciences and Design (including final year project and industrial attachments) and at least 450AUs Complimentary Studies. The programme covers 5 academic years. Industrial training must cover minimum of eight (8) weeks.		
3	Integrated Design Project (IDP)		
4	Final Year Project (FYP)		
5	Industrial training (minimum of 8 weeks)		
6	Full-time academic staff (minimum of eight (8) with at least three (3) Professional Engineers registered with the EBK		
7	Staff: student ratio 1: 25 or better.		
8	External examiner/advisor report. (one in every one academic year)		

Failure to meet any one of the qualifying requirements will mean that the programme shall not be assessed for accreditation, and the process shall stop here and no submission to the EAC- Kenya can be made by the IHL. IHLs are advised to ensure all requirements are fulfilled by the programme before re-applying for accreditation

For Approval of a New Programme, please fill respond to this Appendix wherever applicable

This Appendix contains checklist of Documents for Accreditation/Approval of New Programme and Relevant Information as follows:

i) Chapter 4- 4.2 and 4.3: Self-Assessment Report (SAR) to be submitted through the Accreditation Management System (AMS).

ii) Chapter 4- 4.4 and 4.5: Supporting documents to be submitted with the SAR.

A: GENERAL INFORMATION

No.	Refer to Section 4.3.1	To be filled out by the IHL where applicable	Checked by EAC-Kenya
1	Name of IHL.		
2	Address of IHL.		
3	Name of Faculty/School/Department.		
4	Name and phone number of Staff to be Contacted.		
5	Programme for Accreditation.		
6	EAC- Kenya Reference Number.		
7	Degree to be Awarded and Abbreviation.		
8	IHL Awarding the Degree: (if different from A1).		
9	Mode of Study (Full time)		
10	Duration of Programme (in years).		
11	Medium of Instruction of Programme Evaluated.		
12	Language Available for Reference Materials.		
13	IHL Academic Session.		
14	URL Address; IHL website.		

B: PROGRAMME ACCREDITATION HISTORY

No.	Refer to Section 4.3.1	To be filled out by the IHL where applicable	Checked by EAC- Kenya
1	Introduction Year of Programme.		
2	Year of ast Accreditation for this Programme.		
3	Conditions (if any) from previous accreditation.		
4	Action taken on the conditions above		
5	Major Changes (Self-Initiated) Reasons and Year of Changes.		

C: CRITERION 1: PROGRAMME DESIGN

Refer to Sections 3.2.1

D: CRITERION 2: PROGRAMME CURRICULUM CONTENT

Refer to Sections 3.2.2

E: CRITERION 3: FACULTY STAFF ESTABLISHMENT

Refer to Sections 3.2.3

F: CRITERION 4: INSTITUTIONS TRAINING FACILITIES AND INFRASTRUCTURE

Refer to Sections 3.2.4

G: CRITERION 5: DURATION OF TRAINING

Refer to Sections 3.2.5

H: CRITERION 6: QUALITY ASSURANCE SYSTEMS

Refer to Sections 3.2.6 and 3.2.6.4

I: CRITERION 7: STUDENTS

Refer to Sections 3.2.7

J: SUPPORTING DOCUMENTS

To be submitted as evidences with SAR.

Ref. item	Supporting documents required	Indicate the location of these items in the digital form	Checked by evaluation panel
A1 –A14	Official publications relating to the Faculty/School/Department/ Programme, undergraduate prospectus and other information accessible through website.		
B1 –B5	Programme's previous accreditation history, reports, relevant letters, and other relevant documents.		
C1	Documented evidences of publication or dissemination of vision and mission statements.		
C2	Documented evidences of publication or dissemination of PEO statements.		
C4	Documented evidences of publication of PEO elements/performance indicators, achievement criteria, and performance targets.		
C5	Sample responded questionnaires/survey forms and/or other tools used to establish/formulate/define PEO elements/performance indicators, and review the PEOs.		
C6	Sample responded questionnaires/survey forms and/or other tools used to evaluate achievement of the PEOs.		
C8	Documented evidences of how the processes and results obtained from the processes resulted in the CQI of the programme.		
C9	Documented evidences such as minutes of meetings, training lists and documents, workshop reports, briefing notes, reminders, relevant forms, and internal communications, instructions, etc. of the processes related to PEOs, and the involvement of various internal and external stakeholders in these processes to support claims made in this section		

Ref. item	Supporting documents required	Indicate the location of these items in the digital form	Checked by evaluation panel
D1	Documented evidences of publication or dissemination of PO statements.		
D4	Documented evidences of publication or dissemination of definition of PO elements/performance indicators.		
D5	Sample responded questionnaires/survey forms and/or other tools used to establish/formulate/define PO elements/performance indicators, and review of the POs.		
D6	Documented evidences of publication or dissemination of the OBE model adopted to deliver, assess and evaluate achievement of the POs.		
D6 – D9	PO box/tray' for each PO explicitly, to cover from mapping of courses to the selected POs, until the determination of the PO achievements (based the adopted model).		
D10	Documented evidences of established PO management system (computer software etc.).		
D11	Documented evidences such as minutes of meetings, training lists and documents, workshop reports, briefing notes, reminders, relevant forms, and internal communications, instructions, etc. of the processes related to POs, and the involvement of various internal and external stakeholders in these processes to support claims made in this section.		

Ref. item	Supporting documents required	Indicate the location of these items in the digital form	Checked by evaluation panel
E3	Documented evidences of publication or dissemination of overall 'Courses to POs' mapping matrix.		
E5	Documented evidences of publication or dissemination of the elaboration/definition of CPS, CEA and Knowledge Profile.		
E6	List of titles of experiments in the laboratory and documented evidences showing open-ended laboratory activities.		
E7	List of industrial training companies.		
E8	List of exposure to professional practice activities and sample students' reports.		
E9	List of final-year project titles.		
E10	Design (capstone) project's synopsis and learning outcomes and Course to Programme Outcomes matrix.		
E11	Documented evidences showing programme implementation of the 'Condition for Passing Courses'.		
E12	Provide documented evidences such as minutes of meetings, training lists and documents, workshop reports, briefing notes, reminders, relevant forms, and internal communications, instructions, etc. of the processes related to Academic Curriculum, and the involvement of various internal and external stakeholders in these processes to support claims made in this section.		

Ref. item	Supporting documents required	Indicate the location of these items in the digital form	Checked by evaluation panel
F1	Documented evidences showing the students admission requirements to the programme.		
F2	Documented evidences showing the policies and processes for AU/Credit transfer/exemption.		
F3	Documented evidences showing available students' counselling services.		
F4	Documented evidences showing formal or informal feedback platform/channel to obtain students feedback and suggestions for further programme improvement.		
F6	Documented evidences showing students' involvement in student organisations and relevant professional engineering bodies that provide experience in management and governance, representation in education and related matters, non-academic or co-curricular activities, and social activities.		
F8	Provide documented evidences showing students' performance in relation to PO from an overall holistic perspective, from both curricular and co-curricular activities, such as participating in design competition, public speaking activities, etc.		
G1	Documented evidences of staff training to ensure real understanding and implementation of OBE, as well as other training such as effective communication skills, teamwork, leadership, etc.		

G5	Documented evidences showing participation of academic staff in professional training and qualifications, and programme's projection/plan on professional training schemes for academic staff.		
G6	Documented evidences showing participation of academic staff in consultancy activities.		
G7	Documented evidences showing participation of academic staff in research and development activities.		
H5	Documented evidences of procedures and monitoring of health and safety aspects of facilities including lecture halls, laboratories, equipment, etc.		
H6	Documented evidences of maintenance and calibration of facilities and equipment/apparatus in the laboratories or elsewhere.		

I1 – I6	Documented evidences of (not limited to): QMS and organisational structure, available policies. Standard Operating Procedures (SOP), or ISO or other certifications. relevant files (including course files) and documentations. relevant minutes of meeting (MOM) related to QMS, such as from IAP's meetings, Quality Committee meeting, etc. management system for safety, health and environment. letters of appointment of IAP, External Examiner(s), and committee members, etc. External Examiners' reports. benchmarking report/s. Provide responses to close the loop of feedback from stakeholders.		

APPENDIX C: Evaluation Panel Report

Name of IHL:

Programme for Accreditation:

General Remarks

A: QUALIFYING REQUIREMENTS

No.	Description	Remark
1	Outcome-based Education (OBE) implementation	Yes / No
2	A minimum of 3400AUs of which 840 AUs are required for Mathematics and Basic Sciences, 2100AUs are attributed to Engineering Sciences and Design (including final year project and industrial attachments) and at least 450AUs Complimentary Studies. The programme covers 5 academic years. Industrial training must cover a minimum of eight (8) weeks)	Yes / No
3	Integrated Design Project	Yes / No
4	Final Year Project	Yes / No
5	Industrial training (minimum of eight (8) weeks)	Yes / No

6	Full-time academic staff (minimum of eight (8) with at least three (3) Professional Engineers registered with the EBK or equivalent	Yes	No
7	Teaching Staff: student ratio of 1:25 or better	Yes	No
8	External examiner/advisor report. (One in every one academic year)	Yes	No

B: Assessment Criteria

1. CRITERION 1: PROGRAMME DESIGN (Programme Educational Objectives and Programme Outcomes) as per section 3.2.1 and 4.3.2

1.1. General Observations:

Observation on Programme Educational Objectives

Observation on Programme Outcomes:

Observation on Processes and Attainment:

Explain:

a. Where is each PO assessed?
b. How is each PO assessed?
c. What is the level of attainment of each PO?

Observation on Stakeholder Involvement:

Overall Comments/Remarks: ***Satisfactory/Unsatisfactory**

Strength	
Weakness	
Concern	
Opportunity for Improvement	

2. CRITERION 2: PROGRAMME CURRICULUM CONTENT (as per section 3.2.2 and 4.3.3)

2.1 Accreditation Units, (AUs)

a) Total number of AUs hours

b) Number of AUs hours for:

Mathematics & Basic Sciences: Engineering Sciences and Engineering Design: Complementary Studies:

The Curriculum

(i) Programme Structure, Course Contents, and Balanced Curriculum

(ii) Programme Delivery and Assessment Method

DELIVERY ASSESSMENT

(iii) Laboratory

(iv) Integrated Design Project

(v) Final-Year Project

(vi) Industrial Training/Attachment

(vii)Exposure to Professional Engineering Practice

Overall Comments/Remarks: *Satisfactory/Unsatisfactory

Strength	
Weakness	
Concern	
Opportunity for Improvement	

3. CRITERION 3: FACULTY STAFF ESTABLISHMENT (as per section 3.2.3 and 4.3.4)

(i) Teaching Staff

Number of teaching staff interviewed	< 1 YEAR	1-5 YEARS	6-10 YEARS	> 10 YEARS

(ii) Number and Competency of Teaching staff

Total number of academic staff teaching the programme	
All eligible staff are registered with EBK	YES ☐ NO ☐ Remarks:
Academic staff are sufficient in number and competencies to cover all curricular areas.	YES ☐ NO ☐ Remarks:
Academic staff have the education, diversity of background, engineering experience, teaching experience.	YES ☐ NO ☐ Remarks:
Academic staff have the ability to communicate, enthusiasm for developing more effective programmes, level of scholarship.	YES ☐ NO ☐ Remarks:

Academic staff participate in professional societies and attainment of Professional Engineer status or as Corporate Members of Learned Bodies	YES ☐ NO ☐ Remarks:

(iii) Qualification, industrial experience & development

Total number of academic staff teaching the programme with P.Eng. qualification.	
Total number of academic staff with PhD qualification.	
Total number of academic staff with Masters qualification.	

(iv) Research/publication/consultancy

Academic staff are given opportunities to conduct research and do consultancy.	YES ☐ NO ☐ Remarks:

(v) Industrial involvement

Academic staff are given provision to undergo industrial attachment towards attaining P.Eng. qualification.	YES ☐ NO ☐ Remarks:

Academic staff are involved in appropriate professional/learned bodies providing services towards the development of the entity.	YES ☐ NO ☐ Remarks:

(vi) Teaching load/contact hours

Average teaching hours per week is less than 15	YES ☐ NO ☐ Remarks:

(vii) Motivation and enthusiasm

Academic staff know that IHL has adequate policies and mechanisms for retaining and rewarding well-qualified staff.	YES ☐ NO ☐ Remarks:
Academic staff are satisfied and motivated with their work environment.	YES ☐ NO ☐ Remarks:

(viii) Use of lecturers from industry/public bodies

Academic staff organize industry talk towards enhancing students' learning activities.	YES ☐ NO ☐ Remarks:

(ix) Implementation of the Outcome-Based approach to education

Academic staff understand and implement OBE in the teaching and learning of the programme	YES ☐ NO ☐ Remarks:

(x) Support Staff (Laboratory and Administration)

Number of support staff interviewed	< 1 YEAR	1-5 YEARS	6-10 YEARS	> 10 YEARS

(xi) Qualification and experience

Laboratory staff are qualified.	YES ☐ NO ☐ Remarks:
Total number of laboratory staff.	
Total number of administrative staff.	

(xii)Adequacy of support staff

Laboratory staff adequacy is satisfactory (ideally 1 staff to 2 laboratories)	YES ☐ NO ☐ Remarks:
Administrative staff adequacy is satisfactory to support programme's operation.	YES ☐ NO ☐ Remarks:

(xiii) Staff development Plan/Activities

Academic staff development: The IHL has systematically plan and provide appropriate sponsorship for postgraduate studies/ sabbatical leave, professional training towards P. Eng. qualification. Academic staff development: The IHL has systematically plan and provide appropriate training and conferences. Academic staff development: The IHL provides appropriate assistance in paying annual professional membership fees.	YES ☐ NO ☐ Remarks:

Laboratory/Technical support staff: The programme has provided the opportunities for them to upgrade their competencies through training and practical exposure. Laboratory/Technical support staff: The programme has provided safety training.	YES ☐	NO ☐ Remarks:

(xiv) Staff assessment

Annual assessment of staff performance is well understood. Assessment takes into account participation in professional, academic and other relevant bodies as well as community involvement.	YES ☐	NO ☐ Remarks:
The programme established a working system for evaluation/feedback by students on matters relevant to the academic environment.	YES ☐	NO ☐ Remarks:

(xv)Academic staff: student ratio

Ratio is 1:25 or better for the period of assessment.	YES ☐	NO ☐
	Remarks:	

Overall Comments/Remarks: ***Satisfactory/Unsatisfactory**

Strength	
Weakness	
Concern	
Opportunity for Improvement	

4. CRITERION 4: INSTITUTIONS TRAINING FACILITIES AND INFRASTRUCTURE as per section 3.2.4 and 4.3.5)

i) Lecture rooms - quantity provided and quality of A/V

Lecture rooms and theatres provided are in satisfactory condition equipped with learning facilities and equipment.	YES ☐	NO ☐
	Remarks:	
Maintenance of facilities and equipment are in proper order and properly documented.	YES ☐	NO ☐
	Remarks:	

Safety and health of the lecture room is satisfactory.	YES ☐	NO ☐
	Remarks:	

ii) Laboratory/workshop - student laboratory and equipment

Number of laboratories/workshops available.		
Laboratories/Workshops provided are in satisfactory condition equipped with adequate equipment to facilitate learning of modern engineering practice. Equipment and testing bays to accommodate FYP, IDP, mini projects and other activities are adequate and satisfactory.	YES ☐	NO ☐
	Remarks:	
Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the laboratory/ workshop is satisfactory.	YES ☐	NO ☐
	Remarks:	

iii) ICT/computer laboratory - adequacy of software and computers

IT/computer laboratories provided are in satisfactory condition equipped with up-to-date computing and software facilities including internet access and online platforms. Engineering original software to accommodate analysis & design, FYP and IDP's activities and simulation are adequate and satisfactory.	YES ☐	NO ☐
	Remarks:	

Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the IT/computer laboratory is satisfactory.	YES ☐ NO ☐ Remarks:

iv) Library/resource centre - quality and quantity of books, journals, and multimedia

Number of books and related materials for the programme are satisfactory. Number of electronic/digital books and references for the programme are satisfactory.	YES ☐ NO ☐ Remarks:
Learning facilities and spaces are satisfactory. Discussion rooms are available and satisfactory. Opening hours are conducive to students.	YES ☐ NO ☐ Remarks:
Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the library is satisfactory.	YES ☐ NO ☐ Remarks:

v) Recreation facilities

The IHL provides a lively and dynamic atmosphere for the students: The IHL provides student accommodations. The IHL provides sport and recreational centres. The IHL provides health centre. The IHL provides student centre (including surau/masjid). The IHL provides eateries/cafe.	YES ☐ NO ☐ Remarks:
Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the facilities are satisfactory.	YES ☐ NO ☐ Remarks:

Overall Comments/Remarks: ***Satisfactory/Unsatisfactory**

Strength	
Weakness	
Concern	
Opportunity for Improvement	

5. CRITERION 5: DURATION OF TRAINING (as per section 3.2.5 and 4.3.6)

The degree programme leading to the award of an engineering degree shall be five (5) years.	YES ☐ NO ☐

6. CRITERION 6: QUALITY ASSURANCE SYSTEMS (as per section 3.2.6 and 4.3.7)

Institutional Support, Operating Environment, and Financial Resources

i) Sufficient to assure quality and continuity of the programme

The institutional support and financial resources are sufficient to ensure programme quality and continuity. Support from external bodies is observed.	YES ☐ NO ☐ Explain:

ii) Sufficient to attract and retain well-qualified teaching and support staff

The institutional support and financial resources are sufficient for the programme to attract and retain well-qualified academic (take note of employing international academic staff, to comply with EBK regulation to register) and support staff.	YES ☐ NO ☐ Explain:

iii) Sufficient to acquire, maintain, and operate facilities and equipment

The institutional support and financial resources are sufficient for the programme to acquire, maintain and operate facilities and equipment.	YES ☐ NO ☐ Explain:

Programme Quality Management and Planning

i) System for programme planning, curriculum development, and regular review of curriculum and content

There are established systems towards the improvement of overall programme quality. There are proper and sufficient policies/rules/regulations/procedures in the Department/Faculty or IHL and properly implemented including benchmarking and CQI.	YES ☐ NO ☐ Explain:

External Assessment's Report and Advisory System

i) External examiners report and how these are being used for quality improvement

EE report 1 in every one academic year.	YES ☐ NO ☐ Remarks:

ii) Advisory panel from industries and other relevant stakeholders

Industrial Advisory Panel is available. Minutes of meeting 1 in every year.	Yes ☐ Yes ☐ Remarks:

Quality Assurance

i) System for student admission and teaching and learning

The programme has established a working system for student admission and teaching and learning to assure the achievement of the programme outcomes.	YES ☐ NO ☐ Explain:

ii) System of assessment and evaluation of examinations, projects, industrial training, etc. including preparation and moderation of examination papers

The programme has established a working system for examination regulations including preparation, moderation and assessment of examination papers, projects, industrial training and other forms of learning delivery.	Yes ☐ Yes ☐

Safety, Health and Environment

i) System for managing and implementation of safety, health and environment

There is in place a system for managing and implementation of safety, health and environment.	YES ☐ NO ☐ Explain:

7. Criterion 7: Students (as per section 3.2.7 and 4.3.8)

Student Admission

i) Entry requirements (Academic)

Students entering (entry requirements) KCSE-a minimum aggregate grade of C+, obtained at least a C+ in English/Kiswahili and a minimum C+ in each of the following subjects: Mathematics, Physics and Chemistry or its equivalent.	YES ☐ NO ☐ Remarks:
Programme ensured that students, who do not meet the above criteria, undertake suitable remedial programmes in order to attain the equivalent entry qualification.	YES ☐ NO ☐ Remarks:

ii) Transfer Policy/Selection Procedures/Appropriateness of arrangements for Exemptions from part of the course

Programme has clear policies on AU transfer/AU exemptions.	YES ☐ NO ☐ Remarks:
Programme has put in place the mechanism for AU transfer/AU exemption to allow alternative educational pathways. A maximum of 30% of the total AU hours is allowed for vertical AU transfer/AU exemption (Diploma to Bachelor Degree). A maximum of 50% of the total AU hours is allowed for lateral AU transfer/AU exemption (Bachelor to Bachelor Degree)	YES ☐ NO ☐ Remarks:

Student Development

	YEAR 1 & 2	YEAR 3	YEAR 4	YEAR 5
Number of students interviewed				

i) Student counselling

The IHL has counselling unit/section /Department with qualified counsellor(s).	YES ☐ NO ☐ Remarks:

Programme monitors and evaluates student performance, advice and counsel students regarding academic and career matters, as well as provide assistance in handling health, financial, stress, emotional and spiritual problems.	YES ☐ NO ☐ Remarks:
Programme has academic mentor-mentee system.	YES ☐ NO ☐ Remarks:

ii) Workload

Students' workload is not burdensome.	YES ☐ NO ☐ Remarks:

iii) Enthusiasm and motivation

The teaching-learning environment is conducive.	YES ☐ NO ☐ Remarks:

Students have avenues to provide feedback and suggestions about the programme	YES ☐ NO ☐ Remarks:

iv) Co-curricular activities

Programme ACTIVELY encourages student participation in activities that provide experience in management and governance.	YES ☐ NO ☐ Remarks:

v) Observed attainment of Programme Outcomes by students

Overall Comments/Remarks: ***Satisfactory/Unsatisfactory**

Strength	
Weakness	
Concern	
Opportunity for Improvement	

EVALUATION PANEL ASSESSMENT REPORT SUMMARY

Overall Comments/Remarks:

Strength	
Weakness	
Concern	MAJOR CONCERN OBE a. b. ACADEMIC CURRICULUM a. b. MINOR CONCERN FACILITIES a. b. QMS a. b.
Opportunity for Improvement	
Other remarks	
Suggested Discipline	
Date of Visit:	

Programme Title:	
Faculty:	

Evaluation Panel's recommendation		**Graduating Years**
	Full Accreditation (5 years)	
	Accreditation (5 years) with interim report/interim visit within 2 years	
	Condition(s) to meet/Recommendation for further improvement	
	Accreditation (2 years)	
	Condition(s) to meet/Recommendation for further improvement	
	Decline/Defer Accreditation	
	Comments	

Prepared and submitted by Evaluation Panel:	Signature
HEAD :	
Member :	
Member :	
Date :	

ACTION BY ENGINEERING ACCREDITATION COMMITTEE (EAC- Kenya)

Date Received by the EAC- Kenya: _____

Comments by the EAC- Kenya:

Recommendation by EAC- Kenya

Concurs with Evaluation Panel * Yes/No

If not agreeable with Evaluation Panel's recommendation, EAC- Kenya recommendations are:

Please Cross (X)	EAC- Kenya Recommendations	Graduating Years
	Full Accreditation (5 years)	E.g. 2021, 2022, 2023, 2024, and 2025.
	Accreditation (2 years)	Eg. 2021, 2022
	Condition(s) to meet/Recommendation for further improvement	
	Decline/Defer Accreditation	
	Reasons	
	Condition(s) to meet	

ACTION BY SECRETARIAT	
Date of Transmission of decision to EBK	
Date of Transmission to CUE	
Date of Transmission of decision to MOE	
Date of Issue of Accreditation Certificate	

Appendix D: External Examiner/Advisor Report

The report should consider assessing the following:

i) Programme curriculum.

ii) OBE implementation and achievement of the POs.

iii) The quality of staff assigned to the programme.

iv) Student workload and their involvement in extra-curricular activities.

v) Quality of examination papers as well as other coursework components.

vi) Quality management system of the programme.

vii) Facilities that support the programme.

APPENDIX E: SAMPLE TABLE TEMPLATES FOR SELF-ASSESSMENT REPORT (SAR)

TABLE 1 Course to PO Matrix (SAMPLE)

Code	Course	Core/ Elective	Programme Outcomes										
			1	2	3	4	5	6	7	8	9	10	11
XX1A	Subject 1	Core	/										
XX1B	Subject 2	Core	/										
XX1C	Subject 3	Core	/	/									
XX1D	Subject 4	Core	/		/			/					
XX1E	Subject 5	Core						/		/			
XX1F	Subject 6	Core	/								/		
XX1G	Subject 7	Core	/	/									
XX1H	Subject 8	Core	/										
XX1I	Subject 9	Core		/		/							
XX1J	Subject 10	Core		/	/			/			/	/	
XX2A	Subject 1	Core									/	/	
XX2B	Subject 2	Core		/		/							
XX2C	Subject 3	Core	/										/
XX2D	Subject 4	Core							/	/			
XX2E	Subject 5	Core		/	/			/			/	/	
XX2F	Subject 6	Core		/	/	/	/	/			/		/
XX2G	Subject 7	Elective	/										/
XX2H	Subject 8	Elective							/	/			
XX2I	Subject 9	Elective	/			/							
XX2J	Subject 10	Elective			/			/	/				
XX2A	Subject 11	Elective		/		/							

TABLE 2 Distribution of Engineering Courses for an Engineering Programme (SAMPLE)

Groupings	Course Code	Course	Course Type	Student Learning Time							AUs
				Guided Learning							
				Lecture	Lab/Workshop	Project	PBL/Design	Tutorial	Self-Learning	Others eg. assessment	
Broad Area 1	XXXX	Subject 1	Core	28	28	-	-	-	xxx	-	3
	XXXY	Subject 2	Core	28	-	-	-	28	-	-	3
	XXXZ	Subject 3	Core	28	-	28	-	-	-	-	3
Broad Area 2	YYYY	Subject 4	Core	42	-	-	-	-	-	-	3
	YYYX	Subject 5	Core	14	-	-	28	-	-	-	3
	YYYZ	Subject 6	Core	16	28	-	-	-	-	-	3
Elective Courses	FGHI	Elective I	Elective								
	HIJK	Elective II	Elective								
	IJKL	Elective III	Elective								
TOTAL AUs											
Industrial Training	ABCD	Industrial Training	Core	10 Weeks							5
Final Year Project	BCDE	Project I	Core	Thesis							
	EFGH	Project II	Core	Thesis							
TOTAL AUs FOR ENGINEERING COURSES											

TABLE 3 List of Elective Courses according to Areas of Field of Specialization (if applicable)

AREAS	CODE	ELECTIVE COURSES
Broad Area 1		
Broad Area 2		
Broad Area 3		
Broad Area 4		

TABLE 4 Distribution of General Education Courses for an Engineering Programme (SAMPLE)

Groupings	Course Code	Course	Course Type	Student Learning Time							AUs
				Guided Learning							
				Lecture	Lab/Workshop	Project	PBL/Design	Tutorial	Self-Learning	Others eg. assessment	
Applied Science/Maths/Computer	**XXXX**	**Subject 1**	**Core**	**28**	**28**	-	-	-	xxx	-	**3**
	XXXY	**Subject 2**	**Core**	**28**	-	-	-	**28**	-	-	**3**
	XXXZ	**Subject 3**	**Core**	**28**	-	**28**	-	-	-	-	**3**
Total AUs											

Management/Law/ Accountancy	YYYY	Subject 4	Core	42	-	-	-	-	-	-	3
	YYYX	Subject 5	Core	14	-	-	28	-	-	-	3
	YYYZ	Subject 6	Core	16	28	-	-	-	-	-	3
Total AUs											
Communication Skills/ Humanities/ Ethics	FGHI	Elective I	Elective								
	HIJK	Elective II	Elective								
	IJKL	Elective III	Elective								
Total AUs											
Co-curriculum	BCDE	Co-curriculum 1	Core	Thesis							
	EFGH	Co-curriculum 1	Core	Thesis							
Total AUs											
TOTAL AUS FOR GENERAL EDUCATIONCOURSES											

TABLE 5: Courses Offered (Programme Structure) According to Semester and Total Credits (SAMPLE)

Semester	Code	Courses	Course Type	Credit	
				Engineering Courses	Non-Engineering Courses
1	XXXA	Subject 1	Core		
	XXXB	Subject 2	Core		1
	XXXC	Subject 3	Core	3	
	XXXD	Subject 4	Core	3	
	XXXE	Subject 5	Core		3
	XXXV	Subject 6	Core		3
2	XXXA	Subject 1	Core		
	XXXB	Subject 2	Core		1
	XXXC	Subject 3	Core	3	
	XXXD	Subject 4	Core	3	
	XXXE	Subject 5	Core		3
	XXXV	Subject 6	Core		3
Inter Session					
3					
4					
Inter Session					
Total Credits					

TABLE 6 Distribution of Student Enrolment for all Academic Years for the Past Five (5) Years

YEAR	YEAR				
	Current academic year - 5	Current academic year - 4	Current academic year - 3	Current academic year 2	Current academic year 1
1st Year					
2nd Year					
3rd Year					
4th Year					
Total No. of Students Per Year					

TABLE 7 Entry Qualification of Final Year Students of the Current Year

ENTRY QUALIFICATIONS	NUMBER
O Level (Secondary KCSE)/Equivalent	
A-Level	
Diploma	
Others (Please Specify)	
TOTAL	

TABLE 8 Breakdown in Terms of Numbers of Academic Staff (Fulltime, Part-Time and Inter-programme) by Year for all Academic Years for the Past Five (5) Years

ACADEMIC STAFF	YEAR				
	Current academic year - 5	Current academic year - 4	Current academic year - 3	Current academic year 2	Current academic year 1
Total number of full-time staff (including those servicing other programmes, staff on study or sabbatical leave)					
Full-time equivalent of academic staff servicing other programmes					
Academic staff (on study or sabbatical leave)					
Effective full-time academic staff = (a)-(b)-(c)					
Full-time equivalent of academic staff from other programmes servicing this programme					
Full-time equivalent of part time academic staff					
Full-Time Equivalent Academic Staff (FTES) Contributing to Staff: Student Ratio = (d)+(e)+(f)					

Notes:

If an academic staff member is involved in teaching more than one-degree programme (including off-campus and distance learning), then the full-time equivalent of that particular staff has to be calculated.

For full time equivalent staff calculation, the following can be used as a basis:

One Full-Time Equivalent Staff Member should normally have 15 contact hours (lecture/tutorial/lab supervision/student consultation) per week.

Table 9 Analysis of All Academic Staff

Name	Post Held	Date of First Appointment at the Fac/Sech/Dept.	Academic Qualifications/Field of Specialization/Institution and Year of Award	Professional Qualifications	Membeship in Professional Bodies/Learned Societies	Years of Experience		Level of Activity (high, med, low, none)				
						Govt/Industry Practice	This Fac/Sch/Dept	Professional Society (Indicate Society)	Research	Consulting/Work in Industry	Publications	Administration

TABLE 10 Academic Qualifications of Academic Staff

Academic Qualifications	Number
Doctorate	
Masters	
Bachelor	
TOTAL	

TABLE 11 Professional Qualifications and Membership in Professional Bodies/Learned Societies of Academic Staff

Type of Qualification/Field	Number
Graduate Engineer	
Professional. Eng.	
Consulting. Eng.	
Others (please specify)	

TABLE 12 Post Held by Academic Staff

Post	Number	
	Full Time	Part Time
Professor		
Assoc. Professor		
Senior Lecturer		
Lecturer		
Others (please specify)		
TOTAL		

TABLE 13 Academic Staff Teaching Workload Summary for the Current Semester

Staff Member (Name)	Part or Full Time or From Other Programmes	Courses Taught (Course Code/Credits*)

Table 14 Analysis of All Support Staff

Name	Post Held	Date of First Appointment at the Fac/Sech/Dept.	Academic Qualifications/Field of Specialization/Institution and Year of Award	Years of Experience	
				Govt/Industry Practice	This Fac/Sch/Dept

TABLE 15 Post Held by Support Staff

Post	Number
TOTAL	

TABLE 16 Staff: Student Ratio

SESSION	Current academic year - 5	Current academic year - 4	Current academic year - 3	Current academic year 2	Current academic year 1
RATIO					

APPENDIX F: Conversion of Aus to Credits

Requirements													
3400				**Aus**			**Aus**				**Contact hrs**	**Aus**	**for 14 wks**
840	Maths and Sciences		Maths	500		10.20408	a typical Math unit has 3 hours (2 hrs lecture and 1 hr tutorial)				3	2.5	35
2100	Engineering Sciences and Design		Basic Sciences	340		6.938776	a typical science unit has 6 hours (2 hrs lecture, 3hrs practical and 1 hr tutorial)				6	3.5	49
450	Complimentary subjects		Engineering Sciences	1100			a typical engineering science unit has 6 hours (2 hrs lecture, 3hrs practical and 1 hr tutorial)						
3390			Engineering Design	1000									
			Complimentary Subjects	450			a typical Math unit has 3 hours (2 hrs lecture and 1 hr tutorial)						
				3390									
		Aus				**Contact hrs**	**Aus**	**for 14 wks**	**Credit equivalent**	**No of Units**			
	a typical Math unit has 3 hours (2 hrs lecture and 1 hr tutorial)					3	2.5	35	3	0.085714			
	a typical science unit has 6 hours (2 hrs lecture,					6	3.5	49	4	0.081633			

	3hrs practical and 1 hr tutorial)												
	a typical engineering science unit has 6 hours (2 hrs lecture, 3hrs practical and 1 hr tutorial)					6	3.5	49	4	0.081633			
	a typical engineering design unit has 6 hours (2 hrs lecture, 3hrs practical and 1 hr tutorial)					6	3.5	49	4	0.081633			
	a typical Math unit has 3 hours (2 hrs lecture and 1 hr tutorial)					3	2.5	35	3	0.085714			
		Meaning that average number of units is		Units	Credit								
		Maths Units		14	43								
		Basic Sciences		7	28								
		Engineering Sciences		22	90								
		Engineering Design		20	82								
		Complimentary Subjects		13	39								
				77	281								

Appendix G: Code of Ethics for Programme Evaluators

CODE OF ETHICS FOR PROGRAMME EVALUATORS

The Engineers who were nominated/selected as programme evaluators for accreditation visits must adhere to the following Code of Ethics:

1. **Confidentiality of Information**

   Programme evaluators must neither transmit nor reveal the contents of documents and information obtained during the accreditation process and the respective decisions of the accreditation visiting team meetings to any third party other than the visiting team leader/team leader, team members and the Head of EAC secretariat and authorized secretariat member(s) involved in the process of accreditation, if deemed necessary. When it is uncertain whether a material is regarded as confidential or not, it must be confirmed with the Head of EAC secretariat.

2. **Avoiding Conflict of Interest**

   Individuals /members shall intimate any possibility of conflict of interest and disclose any real or potential possibility that may cause any conflict of interest during the entire proceedings of the accreditation process. The following show general guidelines about avoidance/prevention of conflict of interest:

   a) Individuals who are working (or have worked in the last three (3) years) as faculty members, adjunct professor, part-time lecturers/employees, or in any other capacity etc. must not participate in accreditation process / decision making for the concerned program(s) of the Institution of Higher Learning (IHL);
   b) Individuals, who applied for any job appointment at the concerned institute or are currently under consideration for any job at the concerned institute must not participate in the accreditation process/decision making for the concerned program(s) of Institution of Higher Learning (IHL);

c) Individuals, whose immediate family members are either studying in that particular program or employed in the same institution should not participate in the accreditation process/ decision making of that particular program/institution;

3. **Withdrawal of program evaluators from Specific Discussion / Decision Making**

During proceedings of the accreditation process, programme evaluators should withdraw him/herself from the discussion / decision making process for the Institution that may constitute any conflict of interest as mentioned in Para 2.

4. **Impartiality in Decision Making.**

The main objective of Accreditation is to conduct fair and impartial assessment/evaluation of the program for its compliance against the standards/criteria as laid down in the EAC Engineering Accreditation Standards and to make fair decisions based on the accreditation criteria, policies and regulations with an aim to uphold quality educational standards in line with the best global practices.

DECLARATION STATEMENT

I have received and read the "Code of Ethics for Programme Evaluators" before discharging my duties as an evaluator. I understand the contents and follow these codes to the best of my understanding and abilities.

Name:_____ Affiliation:_____

_____

Role: (Visiting Team Leader/Team Leader/Team Member)

Signature:_____ Date: _____

Received By:

Signature:_____ Date: _____

Head of EAC Secretariat

Appendix H: Code of Ethics Observers

CODE OF ETHICS FOR OBSERVER

An Individual participating as an "Observer" in the accreditation visit must adhere to the following Code of Ethics:

1. **Non-Participatory Role of an Observer**

   The purpose of inclusion of Observer(s) in the accreditation visiting team is to build their capacity by providing on job training to act as potential Programme Evaluators in future or to see the whole accreditation process, subject to the permission of EAC and the concerned IHL only. Therefore, the role of an Observer shall remain strictly non-participatory during the entire accreditation visit unless specifically asked by the Visiting Team Leader of the visiting team.

2. **Confidentiality of Information**

   An Observer must neither transmit nor reveal the contents of documents and information obtained during the accreditation visit to any third party.

3. **Handling of Document and Information (Prohibition of usage other than for the Designated Objectives)**

   Self-Assessment Reports (SAR) and attached data/info, relevant writings (confidential documents) and information obtained during the accreditation process shall be considered privileged information only for the purpose of accreditation. Materials submitted by an applicant institution must not be circulated, rented out, copied to or distribute to the third party without authorization of the applicant institution concerned. Confidential documents include SARs evaluation/ Accreditation reports (and any other similar relevant report/ information), and documents designated by EAC and the members of the visiting team to dispatching organizations. When it is uncertain whether a material is regarded as confidential or not, it must be confirmed with EAC secretariat. All the confidential documents should be returned by the observer to the EAC.

DECLARATION STATEMENT

I have received and read EAC "Codes of Ethics for Observer", I understand the contents and shall adhere to these codes to the best of my understanding and abilities.

Name: _____ Affiliation: _____

Signature: _____ Date: _____

Received By:

Signature: _____ Date: _____

Head of EAC Secretariat