ENGINEERS BOARD OF KENYA

EAC KENYA | Engineering Accreditation Committee, Kenya

REPORT ON TRAINING OF ENGINEERING LECTURERS AND UNIVERSITY STAFF ON OUTCOME-BASED EDUCATION (OBE) STANDARDS

COASTAL REGION

Venue: Technical University of Mombasa

Dates: 15th – 17th July 2026

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1. EXECUTIVE SUMMARY

The Board successfully conducted a three-day training workshop for engineering lecturers and university staff on Outcome-Based Education (OBE) standards. The training was held at the Technical University of Mombasa from 15th to 17th July 2026, targeting universities within the Coastal cluster.

The workshop brought together engineering lecturers, heads of departments, and academic administrators from the two (2) universities offering engineering programmes within the Coastal region: the Technical University of Mombasa (TUM) and Taita Taveta University (TTU).

The training aimed to strengthen the capacity of university lecturers and academic leaders in the design and implementation of Outcome-Based Education curricula, in line with EBK Engineering Accreditation Standards and the requirements of the Washington Accord, to which Kenya gained provisional signatory status in June 2025.

The official opening ceremony was held on the first day of the workshop, with remarks delivered by Dr. Michael Saulo (Dean, School of Engineering, TUM), Prof. Laila Abubakar, PhD (Vice Chancellor, TUM), Eng. Grace Onyango, CE (Ag. Registrar/CEO, Engineers Board of Kenya), and Ir. Abdul Aziz Omar (Board of Engineers Malaysia), who joined the workshop virtually.

The workshop was facilitated by international and local experts, including a representative from the Board of Engineers Malaysia, who shared global best practices in engineering education accreditation and OBE curriculum design.

Key thematic areas covered during the training included alignment of programme vision with institutional vision and mission, development of Programme Educational Objectives (PEOs), mapping of PEOs to Programme Outcomes (POs), mapping of Course Outcomes (COs) to POs, development of assessment methods, gap analysis using the EBK Excel template, and Self-Assessment Report (SAR) structure.

A significant component of the training was the practical gap analysis exercise, where the participating universities used the provided Excel template to score their programmes across nine assessment areas. The results showed that both universities require moderate transition towards WA-aligned accreditation, with Taita Taveta University scoring 78.57% and the Technical University of Mombasa scoring 76.55%.

Post-training feedback from 31 participants indicated that facilitator effectiveness was the highest-rated aspect of the training, with 71.0% rating it "Very Good" or "Excellent", and all 30 respondents who answered the recommendation question stated they would strongly recommend the training to colleagues. Ratings on confidence in applying OBE point to the need for continued coaching and follow-up support to the universities.

Overall, the training enhanced participants' understanding of Outcome-Based Education frameworks, strengthened institutional readiness for OBE implementation, and promoted collaboration between the engineering faculties of the two participating universities.

2. INTRODUCTION

The Engineers Board of Kenya is mandated under the Engineers Act, 2011 to regulate engineering education and practice in Kenya through accreditation of university programmes.

To align with the Washington Accord requirements, engineering programmes must adopt Outcome-Based Education (OBE), emphasizing measurable learning outcomes that ensure graduate competence.

The training was organized to support universities in transitioning to OBE-based curricula within the Coastal cluster.

2.1. Legal Basis

- Engineers Act, 2011 (Section 7(1)(r))
- Engineers Rules, 2019 (Fourth Schedule)
- Engineering Accreditation Standards (EAC/STD/01, August 2024)

3. RATIONALE

Following Kenya's accession as a provisional signatory to the Washington Accord in 2025, there was need to build capacity among lecturers to implement OBE effectively.

The training aimed to:

- Enhance capacity for OBE curriculum design
- Standardize interpretation of Washington Accord requirements
- Promote student-centered learning
- Support accreditation readiness
- Advance Kenya's progression to full signatory status

3.1. Objectives of the Training

The training aimed to strengthen the capacity of engineering lecturers and university staff to implement Outcome-Based Education in engineering programmes in line with EBK accreditation standards and Washington Accord requirements. The specific objectives were to:

- Enhance understanding of OBE principles and their application in engineering education
- Equip lecturers with practical skills for designing OBE-aligned curricula, learning outcomes, and assessment methods
- Strengthen institutional capacity for curriculum mapping and alignment between Programme Educational Objectives (PEOs), Programme Outcomes (POs), and Course Outcomes (COs)
- Promote student-centred teaching approaches and evidence-based assessment practices
- Support universities in preparing for OBE-based accreditation and continuous quality improvement

4. TRAINING PARTICIPANTS

The workshop brought together participants from the two (2) universities offering recognized engineering programmes within the Coastal cluster. The training targeted academic and administrative personnel who play a central role in the design, delivery, and quality assurance of engineering programmes. Participating universities included:

- Technical University of Mombasa – 55 participants
- Taita Taveta University – 3 participants

A total of 58 participants from the two (2) universities attended the training.

The detailed list of participants and their respective institutions is provided in ***Annex I (Attendance List)*** of this report.

5. TRAINING PROGRAM AND FACILITATION

The training was conducted over three days (15th – 17th July 2026) and involved a combination of technical presentations, practical exercises, and breakout sessions.

Facilitators

a) Eng. Grace Onyango, CE – Ag. Registrar/CEO, Engineers Board of Kenya
b) Ir. Abdul Aziz Omar – Board of Engineers Malaysia (virtual participation)
c) Eng. Prof. Emmanuel Kipkorir, PE – Civil Engineering Master Trainer
d) Eng. Paul Ochola, CE – Electrical Engineering Master Trainer
e) Eng. Prof. Simiyu Sitati, PE – Electrical Engineering Master Trainer

6. WORKSHOP PROCEEDINGS

6.1. Day 1 – Official Opening and Setting the Foundation

The first day combined the official opening ceremony with foundational sessions on the regulatory context, international best practices, and the fundamental principles of OBE.

Opening Ceremony: The training commenced with registration and an opening prayer, followed by introductions facilitated by Eng. Dr. Samuel Abich, PE. Remarks were then delivered as follows:

- **Dr. Michael Saulo**, Dean, School of Engineering, TUM, welcomed participants to the Technical University of Mombasa and affirmed the School of Engineering's commitment to the transition to Outcome-Based Education.
- **Prof. Laila Abubakar, PhD**, Vice Chancellor, TUM, appreciated the Board for selecting TUM to host the Coastal Region training and affirmed the University management's support for the accreditation of its engineering programmes.
- **Eng. Grace Onyango, CE**, Ag. Registrar/CEO, Engineers Board of Kenya, outlined Kenya's journey towards Washington Accord full signatory status and the central role of universities in the transition to OBE-based curricula.
- **Ir. Abdul Aziz Omar**, Board of Engineers Malaysia, joining virtually, congratulated Kenya on attaining provisional signatory status and set the stage for the training.

The opening ceremony concluded with a group photo session.

Session 1: *Regulatory and Legal Framework* – ***Eng. Dr. Samuel Abich, PE*** delivered a comprehensive presentation on the regulatory and legal framework for engineering accreditation in Kenya, the transition to Outcome-Based Education, and Kenya's Washington Accord obligations. He guided participants through key documents, including the Engineers Act 2011, the Engineers Rules 2019, and the new Engineering Accreditation

Standards (EAC/STD/01, August 2024), emphasizing that these standards now serve as the primary reference for all engineering programmes.

Key changes under the new Standards highlighted included:

- **New Criterion on Students:** Focusing on student intake, progression, and support, reflecting the OBE emphasis on what students can do.
- **Accreditation Decision-Making:** Strengthened process with the introduction of a moderation stage to ensure reports are objective and meet standards before being tabled at the Accreditation Management Sub-Committee and the Board.
- **Revised Accreditation Outcomes:** Five-year accreditation requires "no major concerns," while two-year accreditation is granted when there are no more than two major concerns.
- **Emphasis on Professional Registration:** Stressed the need for faculty to hold professional qualifications, noting the existence of an academia model for professional registration.
- **Continuous Quality Improvement (CQI):** Underscored that CQI is central to the Washington Accord. Universities must demonstrate mechanisms for collecting feedback from Industry Advisory Boards, alumni, and students.

Session 2: *International Perspective on OBE and Institutional Responsibilities* – ***Ir. Abdul Aziz Omar*** (Board of Engineers Malaysia) presented virtually, sharing invaluable insights from Malaysia's 20+ year journey in OBE implementation.

- **The Philosophical Shift**, where he described OBE as a fundamental "flip mindset" from traditional content delivery: "We are not just teachers or lecturers; we are also facilitators."
- **The Wholesome Engineer:** He stressed the importance of developing the "humane part" of an engineer – teamwork, communication, ethics, and emotional intelligence – as what will differentiate human engineers from AI.
- **Change Management:** OBE requires a "mindset, even a cultural change," and management commitment from Deans, DVCs, and VCs is crucial.
- **Crafting Outcomes:** PEOs, POs, and CLOs must be "crafted, not just produced" – they are a "plan to act," not just statements.
- **New Knowledge Profile (WK9):** Introduced the new knowledge profile on ethics, diversity, and inclusivity (DEI), which must be practiced in teaching.
- **Constructive Alignment:** Emphasized aligning teaching and assessment methods with desired outcomes, moving away from over-reliance on high-stakes final exams.

Sessions 3 & 4: *Overview of Engineering Accreditation Standards* – The Master Trainers (Eng. Prof. Emmanuel Kipkorir, PE; Eng. Paul Ochola, CE; and Eng. Prof. Simiyu Sitati, PE) took participants through the Engineering Accreditation Standards, covering the accreditation criteria and their application to engineering programmes.

6.2. Day 2 – Formulating and Mapping Outcomes

The second day was dedicated to the formulation of outcomes and practical curriculum mapping.

Session 5: Formulating Outcomes

Eng. Grace Onyango, CE guided participants through the process of formulating Programme Educational Objectives (PEOs), Programme Outcomes (POs), and Course Learning Outcomes (CLOs). A key focus was articulating the clear connection between the University's Vision and Mission, the Programme Vision, and the PEOs.

Sessions 6 & 7: Practical Mapping of PEOs, POs and CLOs

This was the most intensive part of the workshop. Participants engaged in discipline-specific mapping exercises facilitated by the Master Trainers.

Activity 1: PEO Alignment to University Vision and Mission

Participants were guided through the process of aligning their Programme Educational Objectives (PEOs) with their respective University Vision and Mission Statements. Using the template provided (Table 3.2: Alignment of PEOs with Vision and Mission of the University), participants:

- Articulated how each PEO supports the institutional vision and mission
- Identified operational activities that demonstrate the achievement of each PEO
- Linked PEOs to performance targets and assessment criteria

This exercise ensured that programme objectives are firmly rooted in the broader institutional strategy and purpose.

Activity 2: Mapping of Course Outcomes to Programme Outcomes and Knowledge Profile

A key practical exercise involved mapping Course Outcomes (COs) to Programme Outcomes (POs) and the Knowledge Profile (WK1–WK9).

Day Review: The day concluded with a review of key takeaways, where groups shared their mapping challenges, fostering peer learning across disciplines.

6.3. Day 3 – Practical Application, Gap Analysis, and Way Forward

Practical Session: Teaching, Learning & Assessment

The Master Trainers led a session on structuring OBE-aligned engineering curricula and credit distribution, teaching and learning strategies under an OBE framework, and assessment methods, rubrics, and tools for measuring learning outcomes, including the development of assessment rubrics.

Session 8: Institutional Readiness and Self-Assessment Reports (SARs)

Eng. Prof. Simiyu Sitati, PE presented on institutional readiness assessment and gap analysis, and on the structure of the Self-Assessment Report (SAR) as outlined in Chapter 4 of the Engineering Accreditation Standard.

Gap Analysis Exercise: Participants were provided with the Gap Analysis Excel Template. The template covered nine assessment areas: Qualifying Requirements, Graduate Attributes, Curriculum Structure, Assessment & CQI, Staffing, Facilities & Infrastructure, Laboratories, Industry Engagement, and Quality Assurance System. Participants worked in institution-based teams to score their status (0–3), identify gaps, and document required actions.

Session 9: Preliminary Gap Analysis Report

Each participating university prepared a preliminary gap analysis report summarizing their readiness score, key gaps, priority actions, and proposed timelines.

Closing Session: The workshop concluded with a session on the way forward and closing remarks delivered by Eng. Dr. Samuel Abich on behalf of Eng. Grace Onyango.

7. GAP ANALYSIS RESULTS – SUMMARY

As part of the practical session on Day 3, each participating university completed a self-assessment gap analysis using the provided Excel template. The template assessed readiness across nine categories aligned to the Washington Accord requirements. The completed Excel files for each university are attached as annexes to this report. Taita Taveta University's self-assessment was undertaken for its Bachelor of Science in Civil Engineering programme, which admitted its first cohort in 2024.

7.1. Overall Readiness Scores

University	Total Score (%)	Readiness Level
Taita Taveta University	78.57%	Moderate transition required
Technical University of Mombasa	76.55%	Moderate transition required

7.2. Common Gaps Identified Across the Universities

Gap Area	TUM	TTU
Integrated Design Project (IDP) missing or incomplete	✓	✓ (partial)
Industry Advisory Board not active or nonexistent	✓	✓
Outcome attainment tracking and documented CQI actions weak	✓	✓
Modern engineering software tools inadequate	✓	✓ (partial)
OBE training not yet complete for all staff	✓	✓ (partial)
Staff: student ratio below requirement	✓	–

8. PARTICIPANT FEEDBACK ANALYSIS

8.1. Overview of Feedback Collection

At the conclusion of the training, participants were requested to complete an online feedback questionnaire. A total of 31 participants completed the questionnaire (28 from TUM, 2 from TTU, and 1 who did not indicate an institution), representing a response rate of approximately 53%. The summary of responses is provided in ***Annex IV*** of this report.

8.2. Rated Feedback Questions (Quantitative Analysis)

Finding	Detail
Facilitator effectiveness	71.0% rated "Very Good" or "Excellent" – the highest-rated aspect of the training.
Clarity of core OBE concepts	61.3% rated "Very Good" or "Excellent," with the remainder rating "Good."
Theory vs. hands-on balance	53.3% rated "Very Good" or "Excellent."
Addressing institutional barriers	48.4% rated "Very Good" or "Excellent"; five respondents rated this aspect "Fair," making it the lowest-rated area.
Confidence in applying OBE	45.2% rated "Very Good" or "Excellent," with 54.8% rating "Good" – indicating room for further confidence-building and follow-up support.
Overall satisfaction	55.8% of all ratings across the five categories were "Very Good" or "Excellent," with no "Poor" ratings recorded in any category.
Recommendation	100% of the 30 respondents who answered the question stated they would strongly recommend the training to colleagues.

8.3. Qualitative Feedback Themes

Participants also responded to open-ended questions on difficulties experienced, concepts requiring further clarification, anticipated institutional challenges, and follow-up support required from the Board. The most frequently cited responses are summarized below.

Theme	Most Frequently Cited Responses
Difficulties experienced during the training	Limited time relative to the volume of content; prior knowledge required; complexity of mapping terminology; and logistical constraints, including power and internet interruptions, inadequate laptops for hands-on practice, and limited printed training materials.
Concepts requiring further clarification	Mapping of CLOs to POs; formulation of measurable PEOs and POs; the Knowledge Profile (WK1–WK9) and WA Graduate Attributes; calculation of credit values (AUs); SAR preparation; and alignment of curricula to both EBK/WA and CUE/CBET requirements.
Anticipated institutional challenges	Staffing (recruitment, staff:student ratios, and PE registration of academic staff); the time and cost of curriculum redesign; modernization of laboratories and equipment; financing; and securing full departmental engagement.
Follow-up support requested from EBK	Coaching visits; refresher workshops; template SAR documents and other templates; online resources; peer

Theme	Most Frequently Cited Responses
	learning networks; a helpdesk; support for PE registration of academic staff; and closer EBK–CUE harmonization.
Other suggestions	Extending the duration of future trainings; holding a similar training at Taita Taveta University; involving other professional bodies for a harmonized approach; and making the training a regular EBK feature.

9. KEY OBSERVATIONS

Several observations emerged during the workshop:

a) Participants demonstrated strong enthusiasm and willingness to adopt Outcome-Based Education frameworks in their institutions, with participants affirming that TUM is on board for the Washington Accord journey.

b) The training enhanced participants' understanding of the overall structure and philosophy of OBE and how it compares with existing teaching and curriculum frameworks.

c) The two participating universities are at comparable stages of readiness, with both falling within the moderate-transition band of the gap analysis and Taita Taveta University approaching the 80% readiness threshold.

d) The interactive delivery approach, particularly the breakout sessions and the practical gap analysis exercise, fostered collaborative engagement among participants.

e) The virtual participation of the international mentor from the Board of Engineers Malaysia provided valuable context and credibility to the training.

f) Participation was predominantly drawn from the host institution, with 55 of the 58 participants coming from TUM; Taita Taveta University was represented by a delegation of three participants, and its participants requested that a similar training be held at TTU.

g) Feedback indicated that the three-day duration was insufficient for the volume and complexity of the content, and that hands-on sessions were constrained by logistical challenges, including power and internet interruptions and inadequate laptops.

9.1. Key Challenges Identified

Participants and facilitators identified several challenges that need to be addressed for successful OBE implementation:

- **Technical Capacity Gaps in Course Design:**
  - i. Difficulty in formulating clear, measurable, and assessable learning outcomes (PEOs and POs)
  - ii. Mapping of Course Learning Outcomes to Programme Outcomes and the Knowledge Profile (WK1–WK9) remains a grey area for many lecturers
  - iii. Calculation of credit values (AUs) remains poorly understood

- **Gap Analysis Findings:**
    i. Both universities scored lowest in Assessment & CQI (1.6 out of 3), with outcome attainment tracking and documentation of improvement actions identified as weak areas
    ii. Neither university currently has an active Industry Advisory Board
    iii. Integrated Design Projects are missing at TUM and only partially provided for at TTU
    iv. TUM recorded gaps in staff:student ratio, OBE training coverage, modern engineering software tools, and design and innovation spaces
    v. TTU's quality management system is anchored on the outdated ISO 9001:2008 standard, its Complementary Studies content (415 AUs) falls short of the 450 AU requirement, and attributes such as Lifelong Learning are not yet explicit in the curriculum
- **Institutional Readiness and Support:**
    i. Staffing emerged as the most frequently anticipated implementation challenge, including recruitment, staff:student ratios, and PE registration of academic staff
    ii. The time and cost of curriculum redesign, modernization of laboratories and equipment, and financing of the transition were recurrent concerns
    iii. Taita Taveta University's engineering programme is at an early stage (first cohort admitted in 2024), with core laboratories still under development and a small complement of academic and technical staff

10. RECOMMENDATIONS

The following recommendations are drawn from the gap analysis results, participant feedback, and facilitator observations. They are organized by priority level for ease of implementation.

S.No	Recommendation	Timeframe
1.	Introduce Integrated Design Projects (IDP) into all engineering curricula within the next review cycle	Immediate
2.	Establish active Industry Advisory Boards (IAB) for each engineering programme	Ongoing
3.	Strengthen outcome attainment tracking, statistical analysis of assessment data, and documentation of CQI actions	≤ 1 year
4.	Procure modern engineering software tools and continue development of laboratories, design and innovation spaces	Ongoing
5.	Complete OBE training for all academic staff, including staff who did not attend the regional training	≤ 1 year
6.	Recruit additional academic staff to improve staff:student ratios, and accelerate Professional Engineer (PE) registration for academic staff	1–2 years

S.No	Recommendation	Timeframe
7.	Provide the EBK follow-up support requested by participants, including coaching visits, refresher workshops, template SAR documents, online resources, a helpdesk, and peer learning networks	≤ 6 months
8.	Consider holding a follow-up training at Taita Taveta University and extending the duration of future regional trainings to allow adequate coverage of the content	≤ 6 months
9.	TTU to update its quality management system from ISO 9001:2008 to the current version, and to revise its curriculum to meet the 450 AU Complementary Studies requirement and explicitly embed Lifelong Learning, teamwork, and project management and finance outcomes	Next curriculum review
10.	Conduct management-level OBE sensitization for VCs, DVCs, and Deans	≤ 3 months
11.	Establish a peer learning network between the two Coastal universities and with universities from other regions	≤ 3 months
12.	Strengthen EBK–CUE harmonization to reduce duplication in curriculum submission processes	Ongoing

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Date: 21st JULY 2026

Approved by:
Eng. Grace Onyango, CE

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Signature: .....

Date: 23/7/2026

ANNEXES

Annex I: Attendance List

Annex II: Photographs of the Workshop

Annex III: Universities Completed Gap Analysis

Annex IV: Participant Feedback Summary