



Council for the Regulation of Engineering in Nigeria, COREN

22 Addis Ababa Crescent, Wuse Zone 4, Abuja

Accreditation

Programme Evaluator Report

Covenant University, Ota, Ogun State

Civil Engineering

Outcome Based Education (OBE) Accreditation Visit

Monday, 13th – Friday, 17th March, 2023.



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1. OVERVIEW

The visitation team appointed by Engineering Accreditation Committee (EAC) of Council for the Regulation of Engineering in Nigeria (COREN) conducted a four-day accreditation visit to **Covenant University, Ota, Ogun State** to evaluate the Undergraduate Programme of **Civil Engineering** from **Monday, 13th – Friday 17th March 2023**. A **Pre-visitation meeting** was held on **Monday, 13th March, 2023** to exchange findings of the Programme Evaluation with the programme members/leadership based on the review of Self-Study Report (SSR) of the programme submitted by the institution. During the Pre-visitation meeting, a list of queries was consolidated to seek further clarification and understanding on the programme. Also based on the study of SSR, some aspects related specifically to OBE and CQI implementations were identified as requiring detailed study of the related documents for evidence. Subsequently, specific documents/evidences to be examined during the visit were also indicated. Based on these discussions, the schedule of activities for the conduct of second-day visit was slightly modified and communicated to **The Dean, Prof. David O. Olukanni**, the focal person appointed by the Institution for the conduct of the accreditation.

The accreditation team paid a courtesy visit to **The Vice Chancellor, Prof Abiodun H. Adebayo**. Briefing on the institution and the programme was given by **The Head of Department, Prof. Anthony N. Ede**. The programme evaluators also visited several facilities for the programme, such as **classrooms, conference room, laboratories, library, auditorium, offices, and various sports facilities**. Apart from comprehensive review of documents and evidences pertaining to various accreditation criteria, the team also held meetings and interviews with stakeholders such as students, staff members, Industry advisors, Employers and alumni.

The following are highlights of the findings by the Programme Evaluation Team, based on detailed visit of the facilities and thorough review of the documents/evidences about the programme:

- (a) The depth and breadth required in the curriculum is available as far as the contents and its delivery is concerned. Evaluation of students' academic performances is being done but not at OBE adequate level. Also, the assessment methodologies for POs attainments are not being Implemented.
- (b) Quality Management System is in place and is centrally administered by **Covenant University**.
- (c) Procedures and policies for implementing CQI at course and curriculum levels are not adequately put in place.
- (d) The programme has recently started its shift towards OBE, and is in process of defining and refining various aspects related to OBE design and its implementation. Hence, a



number of weaknesses have been found in various sides of Outcome-Based Education (OBE) methodologies and their implementations.

- (e) The Complex Engineering Problems (CEP) and activities needs to be adequately planned and implemented.
- (f) Issues of Safety needs to be given a paramount concern.

Overall, the Programme Evaluation team found some deficiencies and weaknesses related primarily to the general implementation of the OBE, these are more pronounced specifically in Criterion-1: Programme Educational Objectives (PEOs), Criterion-2: Programme Outcomes (POs), Criterion-4: Curriculum and Learning Process, Criterion-6: Continuous Quality Improvement and Criterion-9: Industrial Linkage and Community Services.

2. GENERAL INFORMATION

Covenant University was established in 2002. The main function of the institution is to produce graduates in various fields including the **field of engineering, such as Mechanical, Civil, etc** for both local and international employments.

Civil Engineering Programme started in September 2005 and it offers Honours Degree in Bachelor of Engineering (B.Eng.) in Civil Engineering. and has so far graduated 704 Civil Engineers (562 Male and 142 Female).

The programme is offered as a full-time programme with students admitted through the Joint Admission and Matriculation Board (JAMB) and is in compliance with the minimum admission requirements at UTME and Direct Entry in accordance with COREN BMAS and NUC guideline.

A summary of 5 Years enrolment of students for the Programme is given below:

Class of Degree	1st		2 1		2 2		3rd		Grand Total
	F	M	F	M	F	M	F	M	
2017/2018	8	12	5	32		13		2	72
2018/2019	5	8	6	21	4	12	1	2	59
2019/2020	4	9	17	29	2	8			69
2020/2021	5	7	8	33	4	12			69
2021/2022	3	11	7	26	4	16		2	69
Total	25	47	43	141	14	61	1	6	338

Note: Student Data as per Table 1.1 on Page 4 of SSR.



The Programme has adequate Academic staffing with distribution as shown below:

Area covered	Permanent Academic staff			Visiting Academic staff	
	Ph.D	M.Eng.	B Eng/B. Tech	Ph.D	M.Eng
Core Engineering Subjects	13	8	0	2	0
Shared Engineering Subjects	13	2	0	4	0

Note: Academic staff List as per Tables 3.1 – 3.3 on Pages 19 - 21 of SSR

Computation of Staff: Student Ratio:

1) Considering Present Student Strength:

Present Student Strength = **350**

Engineering Academic staff: **40**

Staff: Student Ratio = A/B = 1: 9

Note: (as per guidelines of Sec 3.2.5.2 of COREN Accreditation Manual, 2019)

3. GENERAL OBSERVATIONS

Criterion-1: Programme Educational Objectives (PEOs)

Covenant University has a well-defined vision and mission statements. The University has also a defined mission statement for its Civil Engineering Programme. In addition, the department has articulated PEOs for its Civil Engineering Programme, which has been publicized to some extent within the department through the Website. However, the statements of these PEOs are too broad and may be difficult to measure. Also, PEO5 lacks clarity, indicating a general lack of understanding in the meaning of PEOs and COREN’s requirements in this regard. Thus, there is a need to revise these PEOs appropriately, in consistency with the University and programme mission and vision, so that they should reflect the targeted professional and career accomplishments of the programme graduates after 4 to 5 years of graduation.

The process of formulating PEOs should involve both internal as well as external stakeholders and should incorporate their formal feedback. There is little evidence of all stakeholders’ involvement in defining PEOs. It is recommended that all the stakeholders should be involved in reviewing the developed PEOs.

As for the formal process for assessing and evaluating the attainment of PEOs, at present there is no well-defined process and support administrative setup for the Civil Engineering programme. The visitation team observed that the Alumni and Employer Surveys are currently not being used by the **Covenant University** to measure PEOs attainment. Key-Performance



Indicators (KPIs) for the assessment and evaluation of PEOs are also yet to be defined. **Covenant University** needs to rationally define KPIs and develop Questionnaire / Survey Forms to objectively assess these specific performance indicators.

Covenant University has only recently started the shift towards OBE and has made some reasonable efforts in this regard. However, in the evaluation of Criterion-1 being one of the prime focuses of OBE, the team has found weaknesses in compliance to this criterion.

Criterion-2: Programme Outcomes (POs)

Covenant University has adopted all the 12 graduate attributes outlined in COREN's Accreditation Manual-2019 as the Programme Outcomes for its Civil Engineering programme. The POs have been publicized within the department through website. However, they need to be well publicized, e.g., through posters and noticeboards, etc. The mapping of these POs to PEOs has also been carried out reasonably.

POs mapping on curriculum courses has been carried out. However, there are weaknesses in these courses-POs mappings in terms of POs contributions of courses and the extent of coverage for higher taxonomy levels in some POs, which call for a critical review of these assignments.

There is no formal process of assessment and evaluation of POs being in place, there are evidences that parts of it are being practiced. However, it does not provide comprehensive coverage of all facets of OBE. In particular, KPIs are not defined for cohort level attainment of CLOs and POs at programme level. The assessment of POs attainment for the course is neither yet covered nor was the departmental staff/management has good understanding about the policy and the process. The use of Rubrics for the assessment of complex outcomes which are not easily quantifiable, e.g., communication skills, teamwork, lifelong learning, etc. is not well understood by the staff and calls for more rounds of training. Similarly, more clarity is needed in the design and use of indirect tools for assessment of POs.

As the evaluation of Criterion-2 is a major focus of outcomes-based education system, the evaluation team has determined that the programme has some deficiencies in demonstrating compliance to this criterion.

Criterion-3: Course Learning Outcomes (CLOs)

The **Civil Engineering Programme** has well-defined Course Learning Outcomes for all courses offered. The CLOs have been locally publicized within the department through the Student Handbook and Website. The mapping of these CLOs to POs has also been carried out reasonably.



A closer look at the CLOs defined for various courses shows inconsistency in the use of appropriate action verbs commensurate with the targeted Bloom's taxonomy levels. Therefore, the programme couldn't prove beyond reasonable doubt that each student has achieved all POs to acceptable level through assessment of CLOs. The appropriateness of the assessment methods along with the level of achievement against the targeted outcomes was not properly evaluated.

Similarly, more clarity is needed in the design and use of indirect tools for assessment of CLOs. Course instructors were encouraged to write out CLOs for their respective courses and suggest the mapping of these CLOs to the appropriate POs. However, the staff members interviewed during the accreditation visit were found not being well acquainted with OBE concepts, especially in terms of defining CLOs with appropriate taxonomy levels, the range of direct-vs-indirect assessment tools appropriate for their courses, use of Rubrics and the assessment methodologies for Psychomotor and Affective domains and defining/formulating a complex problem considering COREN Accreditation manual, 2019 guidelines. Staff members still require more training in the implementation of OBE system. There is a need to put together an effective and comprehensive mechanism to assess the attainment of the CLOs and the POs using formative/ summative approaches. The process of evaluation to determine the attainment of CLOs through quality of assessment mechanism for achievement level of each CLO by every student is not properly shown. Thus, the mechanism for further refining and redefining the CLOs is seriously lacking.

Criterion-4: Curriculum and Learning Process

The Civil Engineering Programme curriculum is bench marked with COREN BMAS and NUC curriculum guideline and is found to be at or above the approved minimum standard for Civil Engineering programme at **Covenant University**.

CLOs for each subject have been formulated and mapped with the POs. Mechanism of CLO & PO accomplishment for individual student, and for cohort need to be further improved. Complex engineering problems are being defined by individual faculty member for his/her relevant subject, however, understanding of complex engineering problem and complex activity need to be further strengthened in the light of guidelines provided in COREN's manual of accreditation. Use of rubrics for the assessment is missing and needs to be developed. Specifically, rubrics for the assessment of final year projects have not been drafted

As far as the availability of laboratories is concerned, enough spacious laboratories are present covering all areas of Civil Engineering, including Structure, Highways, Geotechnical, Hydraulics/Water and Geodetic. There is a need to repair few of the machines that are out of order.



There is need for more safety signs and procedures, including the use of safety gears, safety lines and proper disposal of garbage.

The team has observed no inadequacy in the curriculum.

Criterion-5: Students

Student admission has been in line with the basic criteria laid down by COREN and NUC (i.e. Students admitted through UMTE obtained Five (5) credits at 'O' Level in not more than two sittings, which must include English Language, Mathematics, Physics and Chemistry and any other science subject) and must have scored a minimum score or above at the UTME examination.

However, the programme intake has been increasing marginally over the past few years, with the latest enrolment comprising of 103 students, which may result in needs for larger class sizes and laboratory group of up to 10 students per group. Proportionate increase in the number of workstations in the laboratories must be made.

Interaction with the students showed that they are generally satisfied with the facilities and the availability of instructors for off-class guidance. The team has observed a reasonable degree of compliance to this criterion.

Criterion-6: Continuous Quality Improvement

This accreditation is the first based on OBE, therefore, there is no previous accreditation observations.

The visitation team has found that CQI process is not well documented and institutionalized at all levels of CLOs, PLOs and PEOs. This is a weakness in compliance to this particular criterion.

Criterion-7: Staffing

Departmental academic staff members are well qualified covering all the major areas of the curriculum. Most of them have expertise in various areas of specializations within Civil Engineering being offered at the department. The number of laboratory technologists has match with Technical/Academic Staff minimum ratio of 1:3 as per COREN guidelines, i.e. each laboratory being supervised by a laboratory Technologist and having adequate supporting technical staff.

Academic staff retention is high. Covenant University has well laid down policies for the training of academic staff members. In addition, newly inducted academic staff members are also guided / trained through on job mentoring by senior colleagues. Seminars on OBE trainings



have been conducted but need more training sessions in the near future. The team has found the programme to be generally in compliance to this criterion.

Criterion-8: Physical Facilities and Infrastructure

Laboratory facilities are available in sufficient numbers. There is a need to repair few of the machines that are out of order.

With the gradual increase in student intake, the library space and library resources should also be enhanced proportionately. Sufficient number of computer facility with internet service is available on campus. Allied facilities such as sports grounds, swimming pool, cafeteria, medical, etc. are kept in good condition, and are being utilized efficiently.

The team has found the programme to be in full compliance to this criterion with Weakness on safety as earlier discussed.

Criterion-9: Industrial Linkage and Community Services

The involvement of industry in curriculum development though there but can only be termed as being minimal. This is because there is no formal mechanism in place for receiving inputs from practicing engineers and local industry in the curriculum development. However, the department has in place an informal mechanism for seeking feedback from the employers in Industry for the assessment of attainment level of PEOs. This should be formalized through questionnaires etc.

There is a need for a separate office with adequate staff for establishing liaison with the industry in order to create opportunities for the students to acquire industrial experience via SIWES and SWEP and design projects / ideas addressing the local industry needs / problems. There are no Practicing -Engineers working in the industry who are supervising any student groups in their Final-Year projects.

The department must take immediate actions to remove the weaknesses /concerns raised in compliance to this criterion through formal involvement of industry in the curriculum review process.

The visitation team did find deficiency and weakness in compliance to this particular criterion, which are raised in this regard.

Criterion-10: Institutional Support and Funding

The Civil Engineering Programme is well funded by the Institution.



4. PROGRAMME EVALUATION FORM

The observations of the COREN Evaluation team while evaluating the B Eng. Civil Engineering programme of Covenant University for compliance to various accreditation criteria are attached as “Programme Evaluation Report Form”.

5. RECOMMENDATIONS BY PROGRAMME EVALUATION TEAM

The institute had applied for accreditation under the new COREN Accreditation Manual-2019, i.e. as an institution practicing Outcome-Based Education system. Based on the OBA system of accreditation, the team evaluated the programme of Civil Engineering for its compliance to the Ten (10) accreditation criteria and found a number of deficiencies/weaknesses primarily related to the compliance of **Criterion-1: Programme Educational Objectives (PEOs), Criterion-2: Programme Outcomes (POs), Criterion-4: Curriculum and Learning Process, Criterion-6: Continuous Quality Improvement and Criterion-9: Industrial Linkage and Community Services**

As a result, the team recommends EAC that the programme **may be awarded Interim Accreditation status for a period of One (1) year, i.e. For Session 2023/2024.**

It is further recommended that

1. there should be more trainings (including Hands-on training) on the application of OBE
2. there should be enhanced involvement of the industry (both Consultancy and Constructions) especially in the review of PEOs, curriculum, student projects etc.
3. There is a need for the Programme to review its PEOs to be more concise, manageable and achievable.
4. There is a need for the PEOs to be publicised on departmental boards.
5. Key-Performance Indicators (KPIs) for the assessment and evaluation of PEOs should be defined and develop Questionnaire / Survey Forms to objectively assess these specific performance indicators.
6. There is a need for the POs to be publicised on departmental boards
7. Formal process of assessment and evaluation of POs needs to be put in place.
8. There is a need to put together an effective and comprehensive mechanism to assess the attainment of the CLOs and the POs using formative/ summative approaches.



- 9. Understanding and application of complex engineering problem and complex activity need to be further strengthened.
- 10. Safety must be enhanced and enforced especially in the Laboratories. There is need for more safety signs and procedures, including the use of safety gears, safety lines and proper disposal of garbage.
- 11. All laboratories equipment/machines that are not working should be made good.

ACKNOWLEDGEMENT

The COREN Accreditation visitation team would like to thank the entire staff of Covenant University in general, and the Head of Civil Engineering Programme, the Dean of Engineering in particular, for their hospitality and cooperation for a smooth conduct of evaluation.

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