

# TEMPLATE FOR COREN SELF-STUDY ASSESSMENT REPORT FOR ACCREDITATION OF ENGINEERING PROGRAMMES IN NIGERIAN UNIVERSITIES

## **Introduction**

The institution applying for accreditation must submit documents that provide accurate information and sufficient evidence for the purpose of evaluation. For each program to be accredited, unless otherwise stated, the institution shall submit the following documents:

- i. Self-Study Report (as per the format described below) in Hardcopy
- ii. Duly filled annexes provided in this Manual, in Hardcopy.
- iii. Supporting Material/Documents, either in Hardcopy or in Digital form.

## **Format of Self-Study Report**

A Self Study Report must be comprehensive, easily readable, free standing, and provide a coherent overview with the text addressing each major point in a definitive manner. It is an account of the institution's plan, implementation, assessment and evaluation of the program conducted. In addition, it should be a clear reflection of the processes with results obtained, used in continual quality improvement at all levels of the program's activities. This document with all pages numbered and a table of contents shall provide the information and description about the program to enable the Evaluation Panel to objectively assess the program for the purpose of accreditation. 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 Manual. In other words, this summary document is a form of Self-Study of the institution's Programme and expected to provide accurate information as required by the Accreditation Standard (as detailed in Chapter 3 of this manual).

## **SECTION 1: General**

- (a) Provide general information on the institution, specific programme and attach the institution academic calendar.
- (b) Provide detailed information on program history of accreditation (year of accreditation, conditions imposed and actions taken).
- (c) Describe any self-initiated improvements made in the program and the year the changes were introduced.

## **SECTION 2: Programme Educational Objectives**

- (a) State the vision and mission of the institution and/or faculty (School).
- (b) Describe the PEOs and state where they are published.
- (c) Describe how the PEOs are consistent with the vision and mission of the institution and/or faculty/School and stakeholders' requirements.
- (d) Describe the processes used to evaluate the achievement of PEOs.
- (e) Describe how the results obtained from evaluation are being used to improve the effectiveness of the programme.
- (f) Describe the processes used to evaluate the level of achievement of the PEOs. This includes describing graduates/alumni database, tools (survey, meetings, interviews, etc.) and frequency of activities and timelines.
- (g) Discuss the PEOs achievement results by the graduates/alumni.
- (h) Describe how the feedback and results obtained from the above processes are being used for the CQI of the programme.

- (i) Describe the extent to which the programme's various stakeholders are involved in these processes.
- (j) Describe CQI strategies to be implemented in relation to PEOs.

### **SECTION 3: Programme Outcomes (POs)**

- a) List the POs and state where they are published.
- b) Describe how the POs relate to PEOs (in addition to the template given in **Annex B-1**).
- c) Describe how the POs encompass and are consistent with the 12 POs of Section 3.2.2 of this Manual.
- d) Describe the PO definition or elements/performance indicators.
- e) Describe the processes used to establish and review the POs, and the extent to which the program's various stakeholders are involved in these processes (where applicable). This includes describing the tools used in the processes (survey, meetings, interviews, etc.) and frequency of activities and timelines.
- f) Describe the mapping of courses with POs (as per template given in **Annex-D**).
- g) Explain how the assessment results are applied to further develop and improve the POs.
- h) Describe the materials, including student work and other evidence, that demonstrate achievement of the POs.
- i) Describe the extent to which the programme's various stakeholders are involved in the processes.
- j) Describe CQI strategies to be implemented in relation to POs.

### **SECTION 4: Course Learning Outcomes (CLOs)**

- a) List the CLOs and state where they are published.
- b) Mapping of CLOs to related POs (as per template given in **Annex B2**).
- c) Describe the relationship between the CLOs and the POs.

### **SECTION 5: Curriculum and Learning Process**

- (a) Discuss the program 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.
- (b) Discuss the program delivery and assessment 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.
- (c) Provide evidence of the use of tutorials and non-conventional delivery methods such as Problem Based Learning (PBL) techniques alongside traditional lectures.
- (d) Describe how the requirements of Complex Problem Solving (CPS) and Complex Engineering Activities (CEA) have been addressed.

The information required in **(a) and (b)** 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 (as per template given in **Annex-D**).
- Distribution of the engineering courses according to areas specific to each program (as per template given in **Annex-E**).
- Distribution of the related non-engineering (general education) courses.

- Distribution of the courses offered according to semester (as per template given in **Annex-F**).
- Details of Laboratory equipment/workstations and experiments conducted (as per template given in **Annex-G**).

### **SECTION 6: Students**

The information required in this section should include relevant templates given in Annexes, where applicable.

- (a) Discuss the requirement and process for admission of students to the program, response and annual intake (as per template given in **Annex-H**).
- (b) Discuss the policies and processes for students' transfer and credit transfer/exemption.
- (c) Discuss mechanism for providing guidance to students on academic, career and aspects pertaining to wellness.
- (d) Discuss students' workload, class sizes for theory as well as laboratory sessions and completion of courses.
- (e) 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.
- (f) Summarize the graduation requirements for the program, the process for ensuring and documenting that each graduate completes all graduation requirements for the program (as per template given in Annex M).
- (g) Describe CQI strategies to be implemented in relation to Students.

### **SECTION 7: Continuous Quality Improvement**

- (a) Discuss the mechanism for: program planning; curriculum development; curriculum and content review; responding to feedback and inputs from stakeholders including industry advisors, students and alumni; tracking the contribution of individual courses to POs; tracking outcomes of performance through assessment, including rubrics; reviewing of PEOs and POs; and continuous quality improvement. For a new programme, the institution also needs to discuss the processes for the decision to introduce the programme.
- (b) Discuss the implementation plan based on the observations of the last accreditation visit and the remedial actions taken.

The information required in **(a) and (b)** should include but is not limited to the following:

- Evidence on the participation of faculty members and support staff as well as students in the continuous quality improvement process.
  - Evidence on the development of academic staff through opportunities in further education, industrial exposure, as well as research and development.
  - Policies, internal processes and practices that are in place at all levels within the institution relating to the accreditation criteria as stated in Chapter 3 of this Manual.
- (a) Summarize responses to the external examiner's report.
  - (b) Discuss how the quality management system of the institution provides quality assurance and benchmarking.

- (c) Evidence of the on-going participation of industry advisors in discussions and forums, professional practice exposure, and collaborative projects.
- (d) Provide at least ten (10) employers' feedback report on the performance of students who graduated within the last five (5) years.

### **SECTION 8: Staffing**

The information required in this section should include relevant templates given in annexes, where applicable.

- (a) Discuss the strength and competencies of the academic staff in covering all areas of the program, and in implementing the outcome- based approach to education (as per template given in **Annexes-I ~ K**).
- (b) Discuss how the overall staff workload enables effective teaching (including student-teacher ratio), student-staff interaction, student advising and counselling, institutional service and research activities, professional development and interaction with industry.
- (c) Discuss processes for faculty development, training and retention.
- (d) Describe the role played by the faculty with respect to course creation, modification, and evaluation, their role in the definition and revision of Programme Educational Objectives and Programme Outcomes, and their role in the attainment of the Programme Outcomes. Describe the roles of others on campus, e.g., dean or provost, with respect to these areas.
- (e) Discuss the sufficiency and competency of technical and administrative staff in providing adequate support to the educational programme. These include:
  - A breakdown in terms of numbers of teaching staff (full- time, part-time and inter-programme) by year for the past five years
  - A summary of the academic qualifications of teaching staff.
  - A summary of the professional qualifications and membership in professional bodies/societies of teaching staff.
  - A summary of the posts held by full time teaching staff.
  - A summary of teaching workload of teaching staff for the current semester.
  - An analysis of all support staff and post held in the Department.
  - The staff: student ratio by year for all academic years for the past five years.
  - A listing of lecturers/invited speakers from industry/public bodies and their level of involvement.

Outline the organizational structure of the institution as well as the structure within the faculty/department/programme. Discuss the 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 Programme Educational Objectives and assure continuity of the programme. All relevant policies are to be made available during the visit.

### **SECTION 9: Physical Facilities and Infrastructure**

- (a) 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.

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

The information required in **(a) and (b)** should include but is not limited to the following:

- A summary, in tabulated form, of the lecture facilities (give number, capacity, and audio/video facilities available).
- A summary, in tabulated form, of the laboratories (list down the details of workstation available in each laboratory).
- A summary, in tabulated form, of the workshops/drawing studio (list down the equipment/machinery available in each workshop/drawing studio).
- A summary, in tabulated form, of the computer laboratories (list down the hardware and software available).
- A summary, in tabulated form, of recreational facilities.
- A summary, in tabulated form, of information on recent improvements and planned improvements in these facilities.

#### **SECTION 10: Industrial Linkages and Community Services**

Discuss the involvement of industry in discussions and fora, professional practice exposure, and collaborative projects / research for the solutions to engineering problems. Discuss students' activities and involvement in student organizations that provide experience in management and governance, representation in education and related matters and social activities.

#### **SECTION 11: Institutional Support and Funding**

Discuss the strategies used for the employment and retention of staff for the programme. Discuss institution's financial commitment and support to sustain and enhance the quality of programme. Also summarize the salient features in a tabular form (as per the template given in Annex-L).

#### **SECTION 12: Institutional Documents to be Made Available**

The institution should make available the following items as evidences to support the information provided in the Self-Study Report during the visit:

- (a) The Handbook, Calendar supplement, or other official publication relating to the faculty/school/department, and containing the statement of programme details; Institution prospectus.
- (b) All relevant documents and evidences related to Programme Educational Objectives and Programme Outcomes (one copy) as follows:-
  - 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 questions, Booklets and Marking Schemes. 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 (optional), and any other materials used for the course are also to

be included. For laboratory courses, provide a copy of the syllabi, experiment instruction sheets, as well as supporting information.

- Documents related to training workshops on OBE and Curriculum development.
- Objectives and outcomes assessment instruments – supporting documents for objectives and outcomes assessment including sample questionnaires, portfolios, survey forms, video recordings, etc.
- Copies of the final year project report, instruction sheets, and grade sheets or other evaluations for the project. A listing of final project titles for the past 2 years.
- Copies of the training reports, guidelines for the training, and reviews of PEOs by the industry as well as the staff mentors.
- Copies of the laboratory instruction sheets and reports, grade sheets or other evaluations for the project laboratory report.
- Evidence of students' evaluation of staff.
- A bound copy of the overall students' results for each semester and overall graduating students' spreadsheet.
- Minutes and records of action and improvement of meetings of the programme teaching team, Industry Advisory Committee, staff-student consultation fora.
- Documents related to students' participation in design competition, public speaking activities, etc.
- Documents related to academic staff attending trainings, conferences and workshops.
- Facilities and equipment maintenance records with Equipment calibration records.
- Evidence of activities relevant to industry exposure with a summary of the industrial training schemes, and the list of companies involved.
- Documents related to health, safety, and environment.
- Institution/programme annual report.
- External examiners' reports.
- A **Three-page CV** for each staff member in Annex.

## **ANNEX A: ENGINEERING ATTRIBUTES**

Annex A-1: Engineering Content for Selected Programmes

Annex A-2: Knowledge Profile

Annex A-3: Definition of Complex Problem Solving

Annex A-4: Definition of Complex Engineering Activities

## **ANNEX B: MAPPING OF PEOs TO POs/GRADUATE ATTRIBUTES**

Annex B-1: Mapping of POs to PEOs (Sec 3.2.2)

Annex B-2: Mapping of CLOs to POs (Sec 3.2.2)

Annex B-3: Course Evaluation Form

## **ANNEX C: SYSTEM OF INSTRUCTIONS AND EXAMINATION**

## **ANNEX D: MAPPING OF COURSES TO POs**

## **ANNEX E: ENGINEERING CURRICULUM DESIGN**

### **ANNEX F: CURRICULUM**

Annex F-1: Course Offerings

Annex F-2: List of Electives

### **Annex G: LABORATORIES & LAB WORK**

### **ANNEX H: STUDENTS**

Annex H-1: Student Admissions & Enrolments

Annex H-2: List of Registered Students

Table H-3: Staff/Student Ratio

### **ANNEX I: STAFFING**

Annex I-1: List of Full-Time Departmental Academic Staff

Annex I-2: List of Shared/Visiting Staff from other Departments/Organizations

Annex I-3: List of Full-Time Lab. Technologists

Annex I-4: Academic Staff Summary

Annex I-5: Scenario at the time of Last COREN Visit

### **ANNEX J: TEMPLATE FOR SELF-STUDY REPORT (SSR)**

### **ANNEX K: STAFF WORKLOAD**

### **ANNEX L: INSTITUTIONAL SUPPORT AND FUNDING**

Annex L-1: University Income Details

Annex L-2: University Expenditure Details

### **ANNEX M: QUALIFYING REQUIREMENTS FOR RESOURCE VERIFICATION, PRE-ACCREDITATION & ACCREDITATION VISITATIONS**

### **ANNEX N: CHECKLIST OF DOCUMENTS FOR RESOURCE VERIFICATION, PRE-ACCREDITATION AND ACCREDITATION VISITATION**

Annex N-1: General Information

Annex N-2: Programme Accreditation History

Annex N-3: Criterion 1 - Programme Educational Objectives (PEOs)

Annex N-4: Criterion 2 - Programme Outcomes (POs)

Annex N-5: Criterion 3 - Course Learning Outcomes (CLOs)

Annex N-6: Criterion 4 - Curriculum and Learning Process

Annex N-7: Criterion 5 - Students

Annex N-8: Criterion 6 - Continuous Quality Improvement (CQI)

Annex N-9: Criterion 7 - Staffing

Annex N-10: Criterion 8 - Physical Facilities and Infrastructures

Table N-11: Criterion 9 - Institutional Linkage and Community Services

Table N-12: Criterion 10 - Institutional Support and Funding

**ANNEX O: EXTERNAL EXAMINER'S REPORT**