

COREN
COUNCIL FOR THE REGULATION OF ENGINEERING
IN NIGERIA
Established by Decrees Nos 55/70 and 27/92 (Amendment)
GUIDELINES
(PROGRAMME SELF-STUDY FORM)
FOR
ACCREDITATION OF
ENGINEERING PROGRAMMES IN NIGERIAN UNIVERSITIES

June 2005.

ADDRESS:

No. 22 Addis Ababa Crescent,

Wuse Zone 4.

A.1.0 PRELIMINARY INFORMATION

A.1.1 THE INSTITUTION

A.1.2 Name and Address of Institution:

A.1.3 Date Established:

A.1.4 Name of Vice Chancellor:

A.1.5 Name and Designation of Dean:

A.1.6 COREN Registration of Head of Department:

A.1.7 Name and Designation of Head of Department:

A.1.8 COREN Registration Number of Head of Department:

A.1.9 **HISTORY OF THE PROGRAMME**

Brief trace the history of the programme, following its development to date.

1.0 **ACADEMIC CONTENT**

1.1 **PHILOSOPHY AND OBJECTIVES OF THE PROGRAMME**

State the philosophy and objectives of the programme, which should include, among others, the type and quality of manpower the programme is designed to produce.

1.2 **THE CURRICULUM**

The Curriculum of the programme is the sun total of the experiences offered by the University to achieve the philosophy and objectives of the programme. The curriculum should give the student total education that enables him to communicate well, understand himself and his environment and equip him with knowledge and professional skills to be able to practise as a total, functional engineer in his chosen field on graduation.

The curriculum must be in accordance with the minimum academic standard of the National Universities Commission (NUC –MAS).

Articulate clearly, the curriculum showing the course code course title, structure and content.

1.3 COMPLIANCE WITH ADMISSION REQUIRMENTS

State clearly the compliance of the Programme with the minimum admission requirements at UME and Direct Entry for Undergraduate Programmer Postgraduate Diploma in Engineering.

Minimum requirement for admission into Undergraduate degree programme must be in accordance with the NUC Guidelines. Minimum requirement for PGD admission must be in accordance with the COREN Guidelines.

1.4 ACADEMIC REGULATIONS

There should be a student's handbook for the programme. The hand book should contain entry requirements, rules and regulations governing the conduct of examinations, grading system, penalties for examination malpractice, requirements for withdrawal, repeat, probation, graduation and all the student needs to know about his academic programme.

1.5 STANDARD OF TESTS AND EXAMINATION

The tests and examinations must comply with the minimum standard set by the NUC. There should be a full examination on each course at the end of every semester. Examination questions should cover all areas of the courses as contained in the syllabus. Tests should be adequately administered to cover the course content. A well development marking scheme should be available for each examination and test should well applied.

Include sample of the past questions, marking schemes and model answers for the various levels of the Programme.

1.6 INTERVIEW WITH STUDENTS

Interview with students will enable the visitor to assess the level of leaning the students have attained, including their proficiency and

curriculum coverage. The relationship of the students with the University environment will be assessed. The interview will also draw from the students, their awareness of academic regulations and the cordiality or otherwise of staff- student relationship.

The students should be made available to the visitors on request, from whom a random selection will be made for the purpose of the interview.

1.7 **PRACTICAL/ PROJECT WORKS**

The practical/workshop topics for each course at all levels (were required) should be listed. Level of coverage of the practical/workshop content of each course should be clearly recorded in logbooks which should be made available to visitors. Final year project works and SIWES logbooks are also to be made available to the visitors for assessment.

The students' projects should have clearly defined aim and objectives and should apply acceptable methodology in its execution, should be problem- solving and relevant to the profession/environment.

1.8 **EXTERNAL EXAMINATION SYSTEM**

External Examination System should be in use. An External examiner should possess a Ph.D in Engineering and should not be below the rank of a Senior Lecturer.

Files containing the comments of external examiners should be made available to the visitors.

1.9 **ENGINEERING DRAWING PRACTICE**

Engineering Drawing is mandatory for Engineering students especially at the 200level. Please show, evidence on request by visitors, of adequate for the population of the 200 Level students is mandatory.

1.10 **ADEQUACY OF LECTURERS**

Provide a schedule of courses for each semester, showing their lecturer hours per week. A detailed description of the structure and content of each course is required.

2.0 **STAFFING**

2.1 **TEACHING STAFF**

Give a table of the academic staff of the programme using the following format:

S/N	Name of Staff	COREN Registration Status	Rank/ Designation	Courses Taken		Staff Contact Hour per Week		
				Code	Title	Lecturer	Tutorials	Practical

A detailed curriculum vitae of each academic staff is required.

2.2 **NON- TEACHING STAFF**

List all non-academic (Technical) staff with the rank/designation of each staff. Laboratories and Workshops must be manned by COREN registered Engineering Technologists.

2.3 **ADMINISTRATIVE SUPPORT**

List all administrative staff supporting the programme. Note that the Head of Department must be a COREN registered engineer.

2.4 **STAFF DEVELOPMENT PROGRAMME**

Staff development programme are intended to upgrade and update staff competence and ensure constant availability of the right quality of academic and technical staff through attendance at Seminars, Workshops, Professional Conferences (e.g. COREN Engineering Assembly). Industrial placements and higher degree courses should be encouraged for the upgrading of staff.

The University is required to have a functional staff development programme.

Give details of the programme, including the beneficiaries in the last five years.

2.5 **STAFF CONTRIBUTION TO ENGINEERING AND INDUSTRY**

It is required of staff to make meaningful contribution to the Engineering Profession (e.g active participation in activities of the professional associations, etc.) and to the industry.

Briefly state the contribution made by members of staff in this regard.

3.0 **PHYSICAL FACILITIES**

3.1 **MINIMUM LABORATORY AND WORKSHOPS REQUIRED PER PROGRAMME**

All laboratories and workshops are to be adequately equipped. Every programme must satisfy the minimum required number of laboratories and workshops as articulated in the following. All practicals and laboratory equipment should be clearly articulated.

3.1.1 **AGRICULTURAL ENGINEERING**

- (1) Soil Mechanics Laboratory
- (2) Basic Agricultural Engineering Practice Workshop
 - (i) General Survey of Tractors
 - (ii) Tractor Driving Practice
- (3) Hydraulics Laboratory
- (4) Farm Power and Machinery Laboratory

3.1.2 **CIVIL ENGINEERING**

- (1) Strength of Material Laboratory
- (2) Concrete Laboratory
- (3) Structures Laboratory
- (4) Hydraulics Laboratory
- (5) Soil Mechanics/Geotechnical/Highway Engineering Laboratory
- (6) Survey/Photogrammetry Laboratory
- (7) Water and Waste Water Laboratory
- (8) Wood Workshop

3.1.3 **CHEMICAL ENGINEERING**

- (1) Chemical Analysis Laboratory
- (2) Unit Operations Laboratory
- (3) Chemical Reaction Laboratory
- (4) Transport Phenomena Laboratory

3.1.4 **ELECTRICAL/ELECTRONICS ENGINEERING**

- (1) Control and Instrumentation Laboratory
- (2) Electronics Laboratory
- (3) Microprocessor and Digital System Laboratory
- (4) Computer Engineering Laboratory (Hardware & Software)
- (5) Communication Laboratory
- (6) Energy Laboratory
- (7) Electric Power/Machine Laboratory

3.1.5 **MECHANICAL ENGINEERING**

- (1) Thermodynamics/Fluid Laboratory
- (2) Fluid Mechanics Laboratory
- (3) Mechanics of Machine Laboratory
- (4) Metallurgy Laboratory
- (5) Strength of Materials Laboratory
- (6) Sound and Vibration Laboratory
- (7) Computer Laboratory

3.1.6 **METALLURGICAL AND MATERIALS ENGINEERING**

- (1) Metallography Laboratory
- (2) Mechanical Testing Laboratory
- (3) Recrystallization Kinetics Laboratory
- (4) Heat Treatment Laboratory
- (5) Metal Solidification Analogue Laboratory
- (6) Determination of Moulding Sand Properties Laboratory
- (7) Mineral Processing Laboratory

3.1.7 **PETROLEUM ENGINEERING**

- (1) PVT Laboratory
- (2) Drilling Technology Laboratory
- (3) Reservoir Engineering Laboratory

3.1.8 **PRODUCTION ENGINEERING**

- (1) Metrology Laboratory

- (2) Manufacturing/Production Laboratory
- (3) Foundry and Heat Treatment Laboratory
- (4) Welding and Fabrication Workshop
- (5) Human Factors Engineering Laboratory
- (6) Computer Laboratory

3.1.9 **COMPUTER ENGINEERING**

- (1) Microprocessor Laboratory
- (2) Digital Laboratory
- (3) Instrumentation and Telecommunication Laboratory
- (4) Process Control Laboratory
- (5) Software Engineering Laboratory

3.1.10 **FOOD ENGINEERING**

- (1) Food Microbiology Laboratory
- (2) Food Analysis Laboratory
- (3) Food Process Technology Laboratory
- (4) Food Engineering Laboratory

3.1.11 **FACULTY WORKSHOP**

There should be a Faculty Workshop for use by a all students at all levels, including final year students for their project works.

3.2 **CLASSROOMS AND LECTURE THEATRES**

List all spaces for lectures using the following format.

S/ N	TYPE	NUMBER EXCLUSIVELY AVAILABLE	AVERAG E AREA IN	C A P A C I T Y (N U M B E R O F S T U D E N T S	FACILITIE S JOINTLY
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		FOR THE PROGRAMME	M²	T H A T C A N B E ACCOMODATED)	USED
1.	Lecture Room				
2.	Lecture Theatre				
3.	Drawing Studio				

Classrooms could be assigned to programme classes exclusively or jointly share between programmes. In each case, classrooms should be adequately spacious to accommodate all students to be comfortably seated. Classrooms should be well furnished, ventilated, illuminated and provided with ceiling fans, teaching boards and teacher's podium. For a lecture theatre of capacity exceeding 200, visual aids and public address systems should be provided while the lecture environment should be generally kept tidy.

3.3 **OFFICE ACCOMMODATION**

Office accommodation should be spacious, well ventilated and provided with a fan or air- conditioner. The office should be well furnished with chairs, tables, filing cabinets, and bookshelves. The following is a guide to the minimum requirement:

S/N	OFFICE	NO ROOM	IN FACILITIES
1.	Head of Department	1	Table, Chairs, Rug Carpet, Air-Conditioner, Filing Cabinet, Bookshelf,

			Computer Unit, Secretary and F a c i l i t i e s
2.	Professor	1	Table, Chairs, Rug Carpet, Air- Conditioner, Filing Cabinet, Bookshelf, Secretary.
3.	Senior Lecturer	1	Table, Chairs, Rug Carpet, Air- Conditioner, Filing Cabinet, Bookshelf.
4.	Lecturer 1	1	Table, Chairs, Fan, Filing Cabinet, Bookshelf.
5.	Lecturer 11 and below	2	Table, Chairs, Fan, Filing Cabinet and Bookshelf.

In addition, all technologists manning laboratories and workshop should occupy offices adjacent to the laboratory/workshops. Such offices should be adequately furnished.

4.0 **LIBRARY FACILITIES**

List essential books, periodicals/journals and other visual resources (including VSAT) available for the programme.

5.0 **FUNDING**

A clear statement of adequacy or otherwise of funding of the programme should be available good quantity and

quality either in the central library or the departmental library and readily accessible by students.

6.0 **EMPLOYERS' RATING**

State the various responses from employers of the graduates for the programme, sampling five for each year (if available) for the past five years. In addition, the record of all the responses shall be made available at visitation in file.

It is mandatory for the University to collate information on its graduates to enable it determine the quality of students' performance on the job and the quality of curriculum used to attain the desired result. Responses from employers of students on SIWES programme are also relevant.

7.0 **OVERALL MANAGEMENT OF THE PROGRAMME**

The programme should be managed by a Head of Department who must be COREN registered and should not be lower in rank than a Senior Lecturer.

The Head of Department should have a computer-literate secretary with office adjacent to that of Head of Department.

Provide the organogram showing the structure of the Management of the programme in the overall structure of the University.

8.0 **TYPICAL VISITATION PROGRAMME**

Accreditation visit typically covers three (3) working days and the programme is as following:

Day 1

Arrival at the Institute. Visitors report to the office of the Vice – Chancellor.

Check into accommodation.

- 7: 00a.m - Dinner
- 8: 30p.m - Pre – Visitation meeting of team members

Day 2

- 7: 00a.m - Breakfast
- 9: 00a.m - Courtesy call on Dean of Faculty/School
- 9: 30a.m - Meeting with Heads of Departments/ Programmes to be visited
- 10:00a.m - Courtesy call on Vice- Chancellor accompanied by Dean and Heads of Department/ Programmes.
- 11: 00a.m - Team visit common facilities used by the Engineering Departments – Library, Workshop, Laboratories, Design Studios, General Environment.
- 1:00p.m - Lunch
- 2:00p.m - Team breaks up into disciplines and visits Departments – meet department staff for preliminary discussions.
- 3:00p.m - Each Team tours Departmental facilities- classrooms, offices, laboratories, workshops.
- 7:00p.m - Dinner

Day 3

- 7:00a.m - Breakfast
- 9.00a.m - Tour of Department facilities continues
- 12.00noon - Meeting with HOD, lecturers, Workshop & Laboratories Staff to discuss observation (s) in the facilities toured.
- 1:00p.m - Lunch
- 2:00p.m - Teams are supplied with Students files, project reports, practical work reports, examination questions and script etc. team interviews a cross- section of students, studies students' files and records.
- 4:00p.m - Team interviews and interacts with all lecturers, technical staff and administrative staff, studies staff files for information on staff recruitment and development practices. Team inspects students' project reports, external examiners' reports, sample examination questions and scripts, etc
- 7:00p.m - Dinner
- 8:30p.m - Team retires to prepare preliminary report

Day 4

- 7:00a.m - Breakfast
- 9:00a.m - Team meets HOD to discuss preliminary report
- 10:00a.m - Team and HODs meet with Dean to present and discuss the reports on each department/programme

- 1:00p.m - Lunch
- 2:30p.m - Final Report to the Vice – Chancellor
- 4:00p.m - team prepares final Report on each programme and makes final assessment. All Score sheets and final assessment submitted to the Team Leader who prepares a comprehensive report with COREN Staff the final form ready for typing.
- 7:00p.m - Dinner

Day 5

- 7:00a.m - Departure