ENVIRONMENTAL HEALTH COUNCIL OF NIGERIA
Established by Act 11 of 2002 (As Amended)

GUIDELINES FOR PROFESSIONAL APPROVAL OF BACHELOR OF ENVIRONMENTAL HEALTH SCIENCE (BEHS) PROGRAMME IN NIGERIA

October, 2022

TABLE OF CONTENTS

FOREWORD

VISION

Ensure that Environmental Health Practice is positioned as the fulcrum of Public Health in Nigeria

MISSION

To improve Standard in Training and Practice adding value to Environmental Health Services

MANDATE

a. Determining what standards of knowledge and skill are to be attained by persons seeking to become members of the profession of Environmental Health and improving those standards from time to time as circumstances may permit;
b. Securing in accordance with the provisions of this Act the establishment and maintenance of a register of persons registered under this Act as members of the profession and the publication from time to time of lists of those persons;
c. Conducting examinations in the profession and awarding certificates or diplomas to successful candidates as appropriate and for such purpose and the Council shall prescribe fees to be paid in respect thereof, and
d. Performing the other functions conferred on the Council by this act.

GUIDELINES FOR PROFESSIONAL APPROVAL OF BACHELOR OF ENVIRONMENTAL HEALTH SCIENCE (BEHS) PROGRAMME IN NIGERIA

1.0 INTRODUCTION

The Environmental Health Council of Nigeria (EHCON) established by Act 11 of 2002 (As amended) to regulate the practice of Environmental Health Profession in Nigeria. The mandates of the Council given in section 1 includes '**determining what standards of knowledge and skill are to be attained by persons seeking to become members of the Profession of Environmental Health and improving those standards from time to time as circumstances may permit'.**

In pursuance of Sections 1(a), 10 and 12 of the Act, the Council has developed these guidelines for Professional Approval of Bachelor of Environmental Health Science Programmes to guide academic institutions in the administration of training programmes. These guidelines further specify minimum academic and practical skills to be acquired by trainee Environmental Health Practitioners in Nigeria.

2.0 PURPOSE

The purpose of these guidelines therefore is to ensure uniform standard, maintenance of minimum academic requirements and ensuring that training institutions provide minimum human and material resources to impart the required knowledge, skills and competencies to the trainees.

3.0 OBJECTIVES

This document serves as a guide for the establishment of Bachelor of Environmental Health Science in Universities and other approved institutions.

3.1 <u>The specific objectives of these guidelines are:</u>

1. To promote a high quality education for person(s) studying environmental health science programme(s) in Universities in Nigeria.
2. To determine the adequacy of physical facilities, human resource and equipment available for the training of prospective Environmental Health professionals in the institutions.
3. To ensure uniformity in the scope and coverage of basic areas in environmental health science education needed in the 21st century.
4. To support Universities in developing capacity required in environmental health science.
5. To ensure compliance with admission requirements into environmental health science programme(s).
6. To approve programmes for institutions that meet minimum requirements to mount Environmental Health Programme(s).
7. To inform the public on the approval status of the programmes for institutions from time to time.

4.0 ENVIRONMENTAL HEALTH PROFESSIONAL PROGRAMME APPROVAL

For the avoidance of doubt, these guidelines shall be applicable for the Professional Approval of Bachelor of Environmental Health Science Degree Programme.

4.1 PROFESSIONAL PROGRAMME APPROVAL STATUS

There shall be three (3) Professional Programme Approval status namely:

- **A.** Professional Programme Approval
- **B.** Renewal of Professional Programme Approval
- **C.** Professional Programme Revalidation

4.2 PROCEDURE FOR PROFESSIONAL PROGRAMME APPROVAL

Institutions intending to mount the programme are expected to comply with the requirements outlined in these guidelines.

A. Professional Programme Approval

This is a status granted to a new programme by the Council through the following processes:

I. Application for **Professional Programme Approval** of Environmental Health Programme(s) by a prospective training Institution,

II. Submission of completed EHCON questionnaire by prospective institution in respect of the intended Programme(s).

III. Payment for the applicable visit will then be made by the institution to the Council and a date for the Facility/Resource assessment visit by the Council will be communicated to the institution.

IV. Communication of the outcome of the visit (approval or denial) by the Council to the institution.

V. Professional Programme Approval lasts for five years.

RENEWAL OF PROFESSIONAL PROGRAMME APPROVAL: Professional Programme Approval will be renewed at the expiration of the approval period (3 Years). The procedures are as follows:

i. The Council shall notify the institution in writing three months prior to the expiration of the subsisting approval.

ii. The institution makes payment as applicable to Council for the renewal of approval visit.

iii. Where the institution fails to comply with the notice and after three months of grace period, the approval granted the institution is withdrawn.

iv. If the outcome of the approval visit is positive, the Approval is renewed

v. If the outcome of the approval assessment is negative, the Council will communicate the institution accordingly. Institution is given six months to rectify the identified deficiencies.

vi. After the expiration of six months and no satisfactory remedial action(s) taken by the institution, the Council shall withdraw the approval and shall take further appropriate measures.

A. **C. RE-VALIDATION**

Where a programme changes its location to a new site, it automatically loses its existing approval status and will require re-validation The procedure for revalidation is as follows:

i. The institution notifies the Council about the movement of the programme not later than three (3) months after such movement.
ii. Institution makes applicable payment for revalidation visit.
iii. If the outcome of the revalidation visit is positive, the approval status is maintained
iv. If the outcome of the revalidation visit is negative, the Council will communicate the institution accordingly. Institution is given six months to rectify the identified deficiencies.
v. After the expiration of six months and no satisfactory remedial action(s) taken by the institution, the Council shall withdraw the approval and may take further appropriate measures.

5.0 REQUIREMENTS FOR MOUNTING BACHELOR OF ENVIRONMENTAL HEALTH SCIENCE PROGRAMME

i. Establishment: Institutions seeking for Professional Approval of the Environmental Health Science Programme must be established by law for public institutions. In the case of privately owned institutions, they must be registered and be in good standing with the Corporate Affairs Commission as a company limited by shares.
ii. Land/Site: The Institution must own a sizeable land capable of hosting all the required facilities and other resources.
iii. Buildings: The Institution must have adequate structures capable of accommodating the programme including all learning facilities such as laboratories, classrooms, library, workshops, hostels, studios, offices etc.
iv. Water Supply: The Institution must have potable and adequate source of water supply.
v. Electricity Supply: The Institution should have constant source of electricity supply (Thermal, Solar, Wind, National Grid)
vi. Access Road: The Institution must have good access road, a good network of internal roads and should be properly landscaped.
vii. Communication: There must be good means of communication within and outside the campus
viii. Staff/Student Welfare: There must be provision for social amenities within the campuses for both staff and students.
ix. Accommodation: There should be good accommodation for both staff and students, where not available alternative arrangement should be made within the community
x. Recreational Facilities: The Institution should provide sport facilities for both staff and students.
xi. Cafeteria: Institution should provide good catering services for both staff and students
xii. Health Care Facility: The Institution should have health care facility for emergencies and treatment of minor ailments with qualified health personnel.
xiii. Insurance: There must be provision of insurance for both staff and students
xiv. Environmental Sanitation: The Institution must provide good and adequate sanitary conveniences with gender demarcation, waste disposal facility and promote aesthetic value in the campus.
xv. Security: There should be adequate security for staff, students and facilities.
xvi. Transportation/Logistics: There should be good transport system for both staff and students to and fro the campus
xvii. Pension Scheme: There should be pension scheme for staff
xviii. Funding: There should be adequate funding of the programme to ensure sustainability
xix. Teaching Facilities: There should be adequate teaching facilities such as classrooms, laboratories, workshops, studios, library, teaching aids, internet, audio-visuals etc

xx. Human Resources: There should be adequate and qualified teaching staff, service staff, technical staff and administrative support staff

xxi. Practice Areas: There should be adequate arrangement for field work facilities for students

6.0 QUALITY CONTROL/ASSURANCE

Monitoring of programmes for quality assurance by the Council will be conducted from time to time to ensure that the programmes are run in line with approved standards. Information on enrolment, graduation, recruitment etc will be made available to the Council by the institution

7.0 FAIR PRACTICES IN EDUCATION

The Council expects the programme and sponsoring Institutions to comply with the following fair practice standards in education.

7.1 Advertisement of Programme - Announcements and advertisements of Bachelor of Environmental Health Science Programme must accurately reflect the approval status of the programme offered.

7.2 Non-Discrimination: Student admission and faculty/school/department recruitment shall be non-discriminatory with respect to race, creed, state of origin, sex, or national origin. However, only prospective students who are physically fit should be eligible for admission in consideration of the job description for the products, which entails extensive field work and regulatory enforcement.

8.3 Health, Safety and Environment: The health and safety of students, faculty, and the public associated with student educational activities must be adequately safeguarded and guaranteed. Institutions should provide and enforce the usage of safety equipment within its premises. Moreover, Institutions should provide well-equipped and functional clinics for emergencies and prompt treatments of minor ailments. The provision of safety and maintenance of aesthetics of environment should be guaranteed at all time.

8.4 Matriculation: The programme should spell out conditions of the study and prospect of the programme. Student handbook, rules and regulations guiding the programme and conduct of student shall be made available. The prospective student shall be properly initiated into the programme.

9.0 QUESTIONNAIRE

Institution shall complete a set of questionnaire before the Professional Approval visit to ascertain the level of preparedness for the programme.

10.0 RATING

For the purpose of clarity, the variables in the questionnaire shall be rated for any of the categories of the approval and every 1% is equivalent to 4 points.

10.1 Approval Visit

Institutions should note that compliance with the requirements for Professional Programme Approval for Bachelor of Environmental Health Science would be rated as follows:

i. Administration 5%

- Instrument of Establishment-5

- Governing Council-5
- Management-7
- Academic Board-3

The maximum points obtainable in this section for evaluation are 20 which amount to 5% of the final assessment.

ii. Human resources 40%
- Professional Teaching staff- 20
- Service (General Studies) staff, - 5
- Technical staff - 10
- Administrative support staff- 5

The maximum points obtainable in this section for evaluation are 180 which amount to 45% of the final assessment.

iii. Infrastructure and Equipment 40%
- Class rooms-5
- Library-7
- Laboratories (General-3 and Professional-6)-9
- Workshops (museum, pest control, demonstration ground etc)-9
- Studios (Computer room, audio Visual & Technical Drawing)-3
- Staff Office Accommodation-3
- Practice Areas/field Facilities (clinics, health offices, vector control, ports, sea and land etc)-4

The maximum points obtainable in this section for evaluation are 180 which amount to 40% of the final assessment.

iv. Miscellaneous 15%
- Curriculum implementation-5
- Electricity-1
- Security-1
- Water supply-2
- Road Network-1
- Communication Facilities-1
- Transportation-1
- Environmental Sanitation-1
- Recreational Facilities-1
- Welfare-1

The maximum points obtainable in this section for evaluation are 60 which amount to 15% of the final assessment.

At the end of the Professional Programme Approval visit, outcome shall be determined as follows:

(a) 0-69% and below of total score - Programme not approved

(b) 70% to 100% - Programme approved

10.2 Professional Programme Approval

Institutions should note that compliance with the requirements for Full Professional Programme Approval of Bachelor of Environmental Health Science should be rated as follows:

i. Administration 1% (SEE QUESTIONNAIRE)
- Instrument of Establishment
- Governing Council
- Management
- Academic Board

The maximum points obtainable in this section for evaluation are 8 which amount to 2% of the final assessment.

ii. Infrastructure and Equipment 15% (SEE QUESTIONNAIRE)
- Class rooms
- Library
- Sanitary conveniences
- Computer
- Staff Office Accommodation

The maximum points obtainable in this section for evaluation are 128, which amount to 32% of the final assessment.

iii Laboratories and Practical 56% (SEE QUESTIONNAIRE)
- Physics,
- Chemistry
- Food and water laboratory
- Air noise and radiation laboratory
- Public health entomology and arbovirus laboratory
- Environmental Epidemiology And Toxicology Laboratory
- Technical Drawing Studio
- Museum
- Audio Visual Studio
- Lecture Hall
- Practicum Areas

iv. Human resources 33% (SEE QUESTIONNAIRE)
- Professional Teaching staff
- Service (General Studies) staff
- Technical staff
- Administrative support staff

v. CORE CURRICULUM MINIMUM ACADEMIC STANDARD (CCMAS) IMPLEMENTATION 10 POINTS (2%)
vi. **ENVIRONMENTAL HEALTH SERVICES 10 POINTS (2%)**
vii. ENTREPRENEURSHIP IN ENVIRONMENTAL HEALTH 20 POINTS (4%)
viii. **MISCELLANEOUS 20 POINTS (4%)**

The maximum points obtainable in this section for evaluation are 120, which amount to 30% of the final assessment.

i. Academic Matters
- Admission
- Curriculum
- Student Handbook
- Examination
- Field Practicals
- Staff/Student Ratio
- Project
- Seminar
- Publications
- Inventions
- Community Service

The maximum points obtainable in this section for evaluation are 124 which amount to 31% of the final assessment.

ii. Miscellaneous 5% (SEE QUESTIONNAIRE)
- Electricity
- Security
- Water supply
- Road Network
- Communication Facilities
- Transportation
- Environmental Sanitation
- Recreational Facilities
- Welfare

The maximum points obtainable in this section for evaluation are 20 which amount to 5% of the final assessment.

At the end of the approval visit, outcome shall be rated as follows:

(a) 70% and above is granted Professional Programme Approval
(b) 69% and below – Institutions are given six months to remedy the grey areas and request for an assessment after a payment of half of the approval fee.
(c) Where Institutions fail to remedy the observed deficiencies within six months, the approval remains denied and the institution will be required to pay full approval on application.
(d) Council if satisfied the institution shall be granted approval.

10.3 **REVALIDATION**

Where a programme changes its location to a new site, it automatically loses its existing approval status and will require re-validation The procedure for revalidation is as follows:

i. The institution notifies the Council about the movement of the programme not later than three (3) months after such movement.
ii. Institution makes applicable payment for revalidation visit.
iii. If the outcome of the revalidation visit is positive, the approval status is maintained
iv. If the outcome of the revalidation visit is negative, the Council will communicate the institution accordingly. Institution is given six months to rectify the identified deficiencies.
v. After the expiration of six months and no satisfactory remedial action(s) taken by the institution, the Council shall withdraw the approval and may take further appropriate measures.

11.0 MINIMUM LABORATORY MATERIAL RESOURCES AND EQUIPMENT FOR BACHELOR OF ENVIRONMENTAL HEALTH SCIENCE PROGRAMME

11.1 MATERIALS REQUIREMENTS IN LABORATORIES, STUDIOS, MUSEUM, AND OTHER PRACTICAL SITES

TABLE I: GENERAL LABORATORY

S/No	Equipment & Materials	Quantity
1	Pipette Rack (*Plastic*)	5pcs
2	Pipette Rack (*Wooden*)	5pcs
3	Glass Pipettes (*1ml vol.*)	10pcs
4	Glass Pipettes (*2ml vol.*)	10pcs
5	Glass Pipettes (*5ml vol.*)	10pcs
6	Glass Pipettes (*10ml vol.*)	10pcs
7	Automatic Micro-Pipette (*0 to 100µl*)	3pcs
8	Automatic Micro-Pipette (*100 to 1000 µl*)	3pcs
9	Test tube Racks (*stainless for 10ml tubes*)	100pcs
10	Test tube Racks (*stainless for 20ml tubes*)	100pcs
11	Test tubes (*10ml*)	100pcs
12	Test tubes (*20ml*)	100pcs
13	Beakers (*50ml vol.*)	10pcs
14	Beakers (*100ml vol.*)	10pcs
15	Beakers (*250ml vol.*)	10pcs
16	Beakers (*500ml vol.*)	10pcs
17	Beakers (*1000ml vol.*)	10pcs
18	Conical flasks (*50ml vol.*)	10pcs
19	Conical flasks (*100ml vol.*)	10pcs
20	Conical flasks (*250ml vol.*)	10pcs
21	Conical flasks (*500ml vol.*)	10pcs
22	Conical flasks (*1000ml vol.*)	10pcs
23	Cylinders (*50ml vol.*)	10pcs
24	Cylinders (*100ml vol.*)	10pcs
25	Cylinders (*250ml vol.*)	10pcs

26	Cylinders (*500ml vol.*)	10pcs
27	Cylinders (*1000ml vol.*)	10pcs
28	Flat bottom flasks (*50ml vol.*)	10pcs
29	Flat bottom flasks (*100ml vol.*)	10pcs
30	Flat bottom flasks (25*0ml vol.*)	10pcs
31	Flat bottom flasks (*500ml vol.*)	10pcs
32	Flat bottom flasks (*1000ml vol.*)	10pcs
33	Centrifuges tubes	100pcs
34	Pasteur pipette (*glass*)	100pcs
35	Pasteur pipette (*plastic*)	100pcs
36	Urinometer	10pcs
37	Thermometer	10pcs
38	Reagent and Dispensing bottles (100ml vol.)	10pcs
39	Reagent and Dispensing bottles (250ml vol.)	10pcs
40	Reagent and Dispensing bottles (500ml vol.)	10pcs
41	Reagent and Dispensing bottles (1000ml vol.)	10pcs
42	pH meter	4pcs
43	Centrifuge (*12 buckets model*)	3pcs
44	Refrigerator (*2 doors*)	1 pc
45	Deep freezer (*medium*)	1 pc
46	Hot Air Oven	1pc
47	Spectrophotometer	1pc
48	Colorimeter	1 pc
49	Water distiller	1pc
50	Incubator	1pc
51	Chemistry Semi Auto-Analyser	1pc
52	Hot plate heater	2pcs
53	Wooden or stainless test tube clamps	25pcs
54	Wooden or stainless test tube clamps	25pcs
55	Water bath	3pcs
56	Fume chamber	1pc
57	Electrophoretic Tanks (*Shandon model*)	2pcs
58	Electronic weighing balance (Top load)	2pcs
59	Haematological Analyser	1pc
60	Thermostat oven	1pc
61	Fume cupboard	2pcs
62	Magnetic hot plate	1pc
63	Temperature control oven	1pc
64	Heating mantle	1pc
65	Hot plate	1pc
66	Binocular Microscope	20pcs
67	Camera Microscope	1pc
68	Teaching Microscope	2pc
69	Reverse Transcription-Polymerase Chain Reaction (RT-PCR) Machine	1pc
70	UV Spectrophotometer	1pc
71	VIS Spectrophotometer	1pc
72	Colorimeter (Hand held)	1pc

73	Autoclave	1pc
74	Desiccators	1pc
75	Rotators	1pc
76	De-ionizer	1pc
77	Distiller machine	1pc
78	Hood fume cabinet	1pc
79	Laminar flow hoods	1pc
80	Atomic Absorption Spectrophotometer (AAS)	1pc
81	Light meters and Luminance meters	5pcs
82	Anemometers	5pcs
84	Manometers	4pcs
85	Flow meters	5pcs
86	Burnsen burner	10pcs

TABLE II: FOOD AND WATER LABORATORY

S/No	Equipment & Materials	Quantity
1	Binocular Microscope	20pcs
2	Fluorescence Microscope	1pc
3	Digital Microscope	2pcs
4	Magnifying Lens	10pcs
5	Centrifuge	2pcs
6	UV Spectrophotometer	1pc
7	Industrial centrifuge	1pc
8	Incubator	5pcs
9	Anaerobic Culture Jars	5pcs
10	Mettler Balance	2pcs
11	Autoclaves	2pcs
12	Water Bath	2pcs
13	Hot air Oven	2pcs
14	Bunsen burner	15pcs
15	Refrigerators	1pc
16	Freezers	1pc
17	Chemical Balance	2pcs
18	Glass wares	Assorted & various sizes
19	Food probes Thermometer	Assorted & various sizes
20	Millipore membrane apparatus	3pcs
21	pH meter	5pcs
22	Turbidity meter	3pcs
23	Conductivity meter	3pcs
24	Water testing kits	Assorted
25	Refractometer	5pcs

TABLE III: AIR QUALITY, NOISEAND RADIATION LABORATORY

S/No	Equipment & Materials	Quantity
1	Sound level Meter	5pcs

2	Air Quality Monitors (Crowcon Gasman CO_2 Monitor)	5pcs
3	Dust detector	6pcs
4	Air Samplers - Gas metres (CO; CO_2; SO_2; NO_2; O3; NH3 etc Particulate Matter Samplers (TSP; PM10; PM2.5; PM0.1; Nano particles	5pcs
5	Ozone monitor	5pcs
6	Portable met station	
7	Radiation monitors	3pcs
8	Flame Ionization detector (FID)	3pcs
9	Global Position Systems (GPS)	3pcs
10	Gas chromatography	1pc
11	High powered Liquid Chromatography	1
12	Atomic Absorption Spectrophotometer	1
13	Inductively-coupled plasma Spectrophotometer	1
14	Toxic gas meters	1pc
15	Combustible Gas and Oxygen meters	1pc
16	Infrared Analyzers	1pc
17	Isocyanate monitors	2pcs
18	Heat stress monitor	3pcs
19	Volatile Organic Compounds Monitors (VOCs)	3pcs
20	Carboxy-haemoglobin sampler	3pcs
21	Spirometer	5pcs
22	Audiometer	5pcs
23	Adenosine Triphosphate Metre	1pcs
24	Lux Metre	10pcs

TABLE IV: PUBLIC HEALTH ENTOMOLOGY AND ARBOVIRUS LABORATORY

S/No	Equipment & Materials	Quantity
1	Teaching Microscope	3pcs
2	Dissecting kit	5pcs
3	Dissecting blade	5pcs
4	Dissecting needle	10pcs
5	Camera Microscope	2pcs
6	Refrigerator	1pc
7	Freezer	1pc
8	PCR Machine	1pc
9	Autoclave	2pcs
10	Shaker water bath	1pc
11	pH meter	1pc
12	Fluorescent Microscope with camera	1pc
13	Inverted light Microscope	1pc
14	Micropipettes	10pcs
15	Multi-channel pipettes	10pcs
16	Electronic balance for weighing chemicals	2pc
17	Glassware	Assorted
18	Water distiller	1pc
19	Hot Air oven	1pc

20	Reagents and Supplies	Assorted
21	Ultra Centrifuge	1pc
22	Elisa Reader	1pc
23	Gel electrophoresis Apparatus	1pc
24	Magnetic Stirrer	1pc
24	Vortex Mixer	1pc

TABLE V: ENVIRONMENTAL EPIDEMIOLOGY AND TOXICOLOGY LABORATORY

S/No	Equipment & Materials	Quantity
1	Spectrophotometer	1
2	Waterproof Plywood	3
3	Inoculation Chamber Economy	2
4	Beehive, Breeding chamber	1
5	Nest For Chrysopa,	2
6	Breeding Nest For Flies	2
7	Brown Plant Hopper Insect Rearing Cage	5
8	Rat Cage	5
9	Mosquito Nest	5
10	Box for Glass Specimen Tubes	5
11	Insect Setting Block	5
12	Entomological Pin Storage Block	10
13	Plankton Net	5
14	Dissecting Microscope	3
15	Teaching Microscope	1
16	Camera Microscope	1
17	Aspira	2
18	Beating net	4
19	Bottle trap for insects	3
20	Butterfly net	3
21	Electrical penetration graph	2
22	Malaise trap	2
23	Euparal	3
24	Entomological equipment for mounting and storage	3
25	Flight interception trap	3
26	Insect trap	3
27	Killing jar	3
28	Leaf litter sieve	3
29	Lilly pin	3
30	Moth trap	3
31	Pheromone trap	3
32	Pitfall trap	3
33	Corcyra Cage	3

TABLE VI: ENVIRONMENTAL HEALTH MUSEUM

S/N	Description of items	Quantity in stock
1.	Sweep net	5pcs

2.	Insect boxes	5pcs
3.	Specimen bottles	5pcs
4.	Magnifying glass	5pcs
5.	Trap nets	5pcs
6.	Lamps	5pcs
7	Sticky traps	5pcs
8.	Sampling knives	5pcs
9.	Specimen cage	5pcs
10.	Cage traps	5pcs
11.	Back-break traps	Assorted
12.	Wooden/metallic insect traps	5pcs
13	Working table wall chart of insects	5pcs
14.	Mollusc, Aves, Rodents, etc	Assorted
15.	Insect displaying boards	Assorted
16.	Scalpels	Assorted
17.	Kidney dish	5pcs
18.	Empty/expired vaccine vials	Assorted
19.	Steam sterilizer	Assorted
20.	Vaccines	Assorted
21.	Vaccine carrier	Assorted
22.	Needles and syringes	Assorted
23.	Immunization charts	Assorted
24.	Hand gloves of different sizes	Assorted
25.	Flip chart	Assorted
26.	Phantom	1pc
27.	Candle filter	Assorted
28.	Doll	Assorted
29.	Sphygmomanometer	Assorted
30.	Pneumatic sprayer	2pcs
31.	Motorized sprayer	1pc
32.	Electrodyne sprayer	1pc
33.	Handy sprayer (flit gun)	5pcs
34.	Knapsack sprayers (CP30)	2pcs
35.	Knapsack sprayer (CP15)	2pcs
36	Stethoscope	Assorted
37.	Anatomical charts/model	Assorted
38	Skeleton model	2pcs
39.	Filtration pot	2pcs

40.	Insecticide pan	5pcs
41.	Parasitology specimen	Assorted
42.	Food samples (grains/legumes/leaves)	Assorted
43.	Overhead projector	1pc
44.	Canned foods	Assorted
45.	ORT kit	Assorted
46	Weighing scale	2pcs
47.	Forceps	2pcs
48.	Scissors	2pcs
49	Fogging machine	2pcs
50	Fire extinguisher	Assorted
51.	Chamber land filter	3pcs
52.	Measuring ruler	Assorted
53.	Posters	Assorted
54.	Human skull model	Assorted
55.	Pelvic girdle model	Assorted
56.	Skull model	Assorted
57.	Heart model	Assorted
58.	Eye model	Assorted
59.	Kidney model	Assorted
60.	Ear model	Assorted
61.	Baton electrical insect killer	Assorted
62.	Electrical insect trap	Assorted
63.	Pressurized sprayer	Assorted
64.	Formalin Preserved Pests	Assorted
65.	Safety wears – goggle, boots, coverall, etc	Assorted
66.	Face masks	Assorted
67.	Monocular microscope	1pc
68.	Glass lens	Assorted
69.	Pesticides – Organochlorines, Organophosphates, Carbamates, Pyrethoids, etc	Assorted
70.	Inoculation set	Assorted
71.	Roof models/charts	5pcs
72.	Life cycle charts	Assorted
73.	Samples of ABN	Assorted
74..	Environmental Sanitation Forms ES_1-ES_{15}	Assorted
75.	Quadrants	Assorted
76.	Bed nets	Assorted

77.	Door and window screen	5pcs
78.	Photographs of pioneers of Environmental Health (National and International)	Assorted
79.	Banned and Unbanned Insecticides	Assorted
80.	Sanitary hard wares – water closet	5pcs
81.	Building plans	Assorted
82.	Charts showing Rural huts and modern houses	Assorted
83.	Torch light	Assorted
84.	Search light	Assorted
85.	Measuring tapes	Assorted
86.	Buckets (metals and plastics)	Assorted
87.	Funnels	Assorted
88.	Insecticide Treated Nets	Assorted
90.	Steam Sterilizer	2pcs
91.	Needles and syringes	Assorted

TABLE VII: AUDIO-VISUALSTUDIO

1.	Video player/VCD	1pc
2	Slide projector	1pc
3.	Overhead projector	1pc
4	Film projector	1pc
5	Magnetic board	1pc
6	Public address system	1pc
7.	Television set (minimum of 42”)	1pc
8.	Cameras (video cameras)	1pc
9.	LCD (Power Point Projector)	1pc
10.	Audio tape recorder	3pcs
11.	Map	Assorted
12	USB Memory Disk	5pcs
13	Memory Chips	5pcs

TABLE VIII: PRACTICE/DEMONSTRATION SITE

1.	House-hold composter	1pc
2.	Model of chemical closet	1pc
3.	Model of incinerators	1pc
4.	Brick models for brick making	1pc
5.	Models of bonding	1pc
6.	Damp-proof courses	1pc
7.	Footings/Foundation	1pc

8.	Conventional Water Treatment System	1pc
9.	Conventional Sewage Treatment System	1pc
10.	Slaughter slab	1pc
11.	Composting pit (Wilson)	1pc
12.	Composting pit (Indoor process)	1pc
13.	Steamer (Formite disinfection)	1pc
14.	VIP Latrine (multiple compartment)	1pc
15.	VIP Laterine (single compartment)	1pc
16	Pit Latrine	1pc
17.	Water closet	1pc
18.	Biogas digester	1pc
19.	Types of housing	1pc
20.	Waste segregation chambers	1pc
21.	Bar incinerator	1pc
22.	Ventilation openings (Types)	1pc
23.	Septic tank/Soak-away pit	1pc
24.	Water collection centre	1pc
25	House Roof Models	5pcs

TABLE IX: TECHNICAL DRAWING STUDIO

1.	Table for drawing	25pcs
2.	Water colour	10pcs
3.	Drawing pencils	Assorted
4.	Drawing pens	Assorted
5.	Display cabinets and boards	2pcs
6.	Magnetic board	2pcs
7.	T-square	25pcs
8.	Ruler	25pcs
9.	Markers	Assorted
10.	Drawing set	Assorted
11.	French curve	25pcs
12.	Compass	25pcs
13.	Protractor	25pcs
14.	Set square	25pcs
15.	Pair of divider	25pcs
16.	Fastener	Assorted

12.0 SPACE NEEDS OF TEACHING FACILITIES

The table below specify minimum office space; laboratory space; workshop space; list of equipment.

S/N	LABORATORY/STUDIO	Dimension	Prep room	Lighting	Ventilation	Toilet/WH
1.	GENERAL LABORATORY	30 m x 15 m	1	500 lux	5-8 litres per second, per occupant AND/OR VO – 1/6 of floor area	1
2.	FOOD AND WATER LABORATORY	15 m x 10 m	2	500 lux	5-8 litres per second, per occupant AND/OR VO – 1/6 of floor area	1
3.	AIR QUALITY, NOISEAND RADIATION LABORATORY	15 m x 10 m	1	500 lux	5-8 litres per second, per occupant AND/OR VO – 1/6 of floor area	1
4.	PUBLIC HEALTH ENTOMOLOGY & ARBOVIRUS LABORATORY	15 m x 10 m	2	500 lux	5-8 litres per second, per occupant AND/OR VO – 1/6 of floor area	1
5.	ENVIRONMENTAL EPIDEMIOLOGY & TOXICOLOGY LABORATORY	15 m x 10 m	1	400 lux	5-8 litres per second, per occupant AND/OR VO – 1/6 of floor area	1
6.	ENVIRONMENTAL HEALTH MUSEUM	45 m x 20 m	1	400 lux	5-8 litres per second, per occupant AND/OR VO – 1/6 of floor area	1
7.	AUDIO-VISUALSTUDIO	10 m x 5 m	-	300 lux	5-8 litres per second, per occupant AND/OR VO – 1/6 of floor area	1
8.	TECHNICAL DRAWING STUDIO	10 m x 5 m	-	400 lux	5-8 litres per second, per	1

					occupant AND/OR VO – 1/6 of floor area	
9.	PRACTICE/DEMONSTRATION SITE(Open Field)	200 m x 100 m	1	N/A	N/A	N/A

Note: V.O means ventilation opening

13.0 SIWES/FIELD PRACTICUM AREAS

Bachelor of Environmental Health students are expected to undergo practical experiences in urban and rural areas, public and private establishments as follows:

S/N	PRACTICAL AREAS	DURATION	REMARKS
1	Epidemiological Units	1 week	C
2	Health Education Units	1 week	C
3	Water treatment plants	1 week	C
4	Urban LGA / Rural LGA	4 weeks	C
6	Accredited EHSP outfits	1 week	C
7	Tertiary, secondary and primary health care facilities	1 week	C
9	Private establishments (individual and corporate organizations)	1 week	C
10	Custodial homes and rehabilitation centres)	1 week	C
11	Sewage treatment facilities	1 week	C
12	Hospitality, sport and recreational facilities	1 week	C
13	Ministries, departments and agencies (MDA)	1 week	C
14	Port health services (air, sea and land borders)	1 week	C
15	Agricultural processing companies (including livestock)	1 week	C
16	Estate facilities and management companies	1 week	C
17	Rail and road transport facilities	1 week	C
18	Energy and power plants	1 week	C
19	Ministry of Works, housing and urban development (Town planning office)	1 week	C
20	Weather and meteorological facilities	1 week	C
21	Environmental Impact Assessment Consulting Firms	1 week	C

22	Process Industries	1 week	C
23	Food-vending establishments (Restaurants, Eateries etc)	1 week	C

NOTE: areas need to be congregated into 4 or 5 areas to enable students spend at least 4 weeks in a place.

14.0 RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING

There shall be adequate resource for smooth running of the programme in this regards**:** Academic and Non Academic Staff.

14.1 Staffing

i. **Academic Staff:** the core teaching staff should not be less than **60% of the total academic staff** in the programme who should be licensed by EHCON.
ii. **Technical staff:** at least 40% of the technical staff involved in the training of students in the programme should be licensed by EHCON.

14.2 Staff-Student Ratio

Determination of the number of academic staff required for an academic programme is contingent on the approved staff-student ratio for each discipline. The approved Staff-Student ratio in Basic Medical and Health Sciences is 1:2515.

14.3 Staff – Mix by Rank

Academic staff in the Universities are broadly classified into three categories; Professorial (Professor/Reader), Senior Lectureship and Lecturers Grade I and below. The Professorial cadre should constitute 20 percent of the staff strength, Senior lecturers 35 percent while the remaining 45 percent is for lecturer I and below.

14.4 Numerically, the Environmental Health Faculty members (Undergraduate) shall comprise a Minimum of:

- one (1) Professor
- one (1) Associate Professor (Reader)
- three (3) Senior Lecturer
- one (1) Lecturer I
- one (1) Lecturer II
- one (1) Assistant Lecturer
- one (1) Graduate Assistant

14.5 Service/General studies

Regarding Service/General studies courses, Lecturers will be sourced from relevant departments.

14.6 Laboratories, Museums, Studios

For Laboratories, Museums, Studios etc, there must be licensed Environmental Health Technologists/qualified relevant technologists in each of the units.

14.7 Administrative Support Staff

For administrative support staff, there should be a qualified secretary with at least an ND in Secretarial Studies/Office Technology and Management (OTM)

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