AFRICA CENTRE OF EXCELLENCE FOR SUSTAINABLE POWER AND ENERGY DEVELOPMENT (ACESPED)

UNIVERSITY OF NIGERIA, NSUKKA MANAGEMENT LABORATORY POLICY'S

JUNE, 2022

LABORATORY GUIDELINES & POLICY

Administrative Responsibility office:	ACE-SPED testing facility
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1. Introduction

The Africa Centre of Excellence for Sustainable Power and Energy Development (ACE-SPED), University of Nigeria, Nsukka, is the owner of the ACE-SPED testing facility. The ACE-SPED Centre Leader serves as the team's chairman, and the other members of the management team take up their respective positions on the board. A technical coordinator oversaw the center's day-to-day operations, while resource personnel for particular tasks were selected from a pool of resources from relevant University departments. The Laboratory Quality Management System criteria in accordance with ISO 15189 are met by the ACE-SPED management laboratory policy, which is in accordance with the ACE-SPED's guiding principles and objectives.

2.0 The ACE-SPED management laboratory policy's goal

i. Verify the accuracy of the data produced by the laboratory.
ii. Quality management encompasses all aspects of laboratory operations that impact the outcomes, from method selection to instrument monitoring to staff education to specimen handling to result reporting. It is not limited to the creation and maintenance of quality control charts.
iii. Determining the accuracy of laboratory findings and enabling laboratory managers to assess whether the lab is performing its duties to a satisfactory standard are the real goals of quality management initiatives.
iv. Reagents, consumables, equipment, and services obtained from outside sources are referred to as external services and supplies.
v. The management strategy guarantees that prospective users are aware of and comprehend the range of the activities conducted in the laboratory. It also has an obligation to comprehend consumer wants and provide supplementary services.
vi. Customer contacts are warranted by good laboratory practices.
vii. There is a great deal of room for growth in these kinds of encounters. Feedback is also recommended as a potent tool for development.
viii. Create guidelines for the administration and operation of the labs.
ix. Promoting adherence to safety guidelines, policies, and procedures
x. Define expectations for the roles of all parties involved

2.1 Statements of Policy

The ACE-SPED testing laboratory is responsible for making sure that its laboratory are appropriate for fostering testing and learning in the relevant partners

3.0 Responsibilities

3.1 University Board

i. The University board will, to the greatest extent feasible, provide a setting where laboratory activities may promote testing and research.
ii. Make sure that every attempt is made to resolve any circumstances that could provide a risk in the laboratory.

3.2 **The Board of ACE-SPED**

The Laboratory Policy will be approved by the ACE-SPED Board, which will also receive reports on the monitoring of its implementation and upkeep.

3.3 The Committee for Laboratory

The Committee for Laboratories will:

i. Oversee the policy to guarantee compliance with it and that all parties involved have access to the required information.
ii. Encourage everyone involved—staff, students, and other stakeholders—to utilise the facilities safely and appropriately.
iii. Keep an eye on the materials available to help partner/students testing and provide suggestions.
iv. Constantly assess the laboratory procedures and provide recommendations for improvement as needed.
v. Create a laboratory schedule before the school year begins.
vi. Report on the Committee's work to the ACE-SPED Testing laboratory Board.
vii. Request feedback on courses, programs, and services from outside stakeholders.
viii. Take part in external evaluations and accreditation processes.

3.4 The Head of the testing Laboratory

The Head of the testing Laboratory will:

i) Authorise the Laboratory timetable and oversee personnel assignments
ii) Ensuring that students/partner understand how to operate the equipment in the lab correctly to get accurate findings and reduce dangers.
iii) Give the required safety instruction and/or information, particularly in the event that a new danger is discovered.
iv) Before partner begin using the Laboratory, make sure they are informed about safety precautions and emergency protocols.

3.5 The Laboratory assistant

The duties of the Laboratory assistant are as follows:

i. Help with everyday tasks related to the Laboratory operations.
ii. Communicates with the head to make sure the Laboratory is stocked with the necessary tools and materials to fulfil the testing and learning objectives and to keep track of consumables.
iii. Make sure the Laboratory is ready for use by organising supplies and equipment for partner usage and providing unambiguous demonstrations
iv. Provides staff support as required with basic laboratory facility management, organisation, and maintenance concerns pertaining to equipment use, safety, etc.

3.6 Students/partners

The students/Partner will:

i. Acquire familiarity with the laboratory apparatus and learn how to operate it properly to guarantee meaningful results and reduce hazards.
ii. Before the first laboratory session, familiarise yourself with information on safety and emergency protocols in laboratories. It is critical that students/partner understand that they bear the primary responsibility for their own personal safety in the laboratory. Additionally, students/partner should understand that while every attempt will be taken to handle potentially hazardous conditions in the lab, the directions and information supplied cannot be regarded as comprehensive.
iii. Follow verbal and written safety instructions at all times throughout the academic semester. It is crucial that all students attend at each laboratory session on time since there may be extra instructions provided at the start of the session.
iv. Avoid working alone or unattended, particularly when handling hazardous chemicals. Laboratories, shops, and other similar settings are full of potential dangers that might result in catastrophic injuries or equipment damage. There is very little chance of an accident happening if the safety procedures are followed. At least two individuals should be present, with permission, so that one person may turn off the device and seek for assistance in case of an emergency. The likelihood of an accident in this course is quite low with sound decision.

4.0 Overall Laboratory Policies & Expectations

4.1 Broad Principles

i. Laboratories must be open Monday through Friday from 9:00 a.m. to 5:00 p.m., and on weekends as needed.
ii. Laboratories must have a supervisor, who can be a lecturer, lab technician, or lab assistant.
iii. Laboratories must meet the requirements for a testing because they are considered specialised spaces.
iv. Safety rules and regulations must be followed at all times in laboratories. As a result, the following cannot be done in any laboratory : Smoking; Eating or drinking (except from Human Ecology and Hospitality); Noise (sound levels should be minimised).

v. It is expected of everyone use the laboratory to behave in a professional way.
vi. Reporting any mishap, no matter how little, to the supervisor right away is required.
vii. Clear paths must be maintained to all areas, including fire extinguishers, electrical panels, emergency showers, and eye wash stations. Smoke alarms need a clean space around them.
viii. Nothing heavy may be kept higher than the height of a table. Thus, only light-weight objects should be stored above in cabinets or other overhead storage areas.

4.2 Emergency Response

Everyone who uses a laboratory must:

i. Read the safety instructions and get acquainted with the fire alarms;
ii. Follow the directions in the event of an emergency.
iii. Be aware of where the eye wash, safety shower, and fire extinguisher are located and how to use them in any laboratory they use.
iv. Avoid using any unusual materials or equipment.
v. As soon as there is an accident, fire, explosion, or spill, let the instructor know.
vi. Understand how to evacuate a building.

5.0 Safety in general laboratories

i. Wash your hands both before entering the laboratory and afterward, and refrain from eating, drinking, or smoking while working in the laboratory.
ii. Carefully read labels.
iii. Before using any equipment, make sure you have received the necessary training and your supervisor's approval.
iv. Put on safety goggles or face shields while handling potentially dangerous objects or machinery, and put on gloves when handling any poisonous or hazardous substance.
v. Appearance: Wear safety glasses or a safety shield, gloves, and laboratory coats while working with hazardous materials.
vi. Verify that long hair or loose clothing is secured or fastened.
vii. Equipment Failure: Notify your instructor or laboratory assistant right once if any equipment breaks down while you're using it. Never attempt to solve the issue on your own since you might endanger both yourself and other people.
viii. Before using any glassware, inspect it for chips and cracks. Glassware cracks might be the result.
ix. Never leave an experiment running unsupervised. But, be sure that the doors are closed and that all ignition sources are off before leaving a lab alone.

5.1 Safety of electricity

i. Before using any high-voltage equipment, get authorisation.
ii. Keep all electrical panels free of obstructions.
iii. Any electrical alterations, including wiring, need to be reported to an authorised individual.
iv. Steer clear of extension cables whenever you can. If you must use one, make sure it's a heavy-duty, electrically grounded device with a separate fuse, and mount it securely.

Extension cables are not meant to be suspended from the ceiling, placed under doors, run across aisles, or connected into other extension cords.

v. Never, ever alter, affix, or substitute any high-voltage apparatus in any way.

vi. Even after an item has been switched off, ensure sure all capacitors are drained (by using a grounded wire with an insulating handle) before contacting high voltage leads or the "inside" of any device. Many hours may pass after an equipment has been switched off before capacitors lose their charge.

vii. USE ONLY ONE HAND to adjust high-voltage equipment or a laser that is driven by a high-voltage source. It's preferable to put your other hand behind your back or in a pocket. By following this technique, the risk of an accident where a high-voltage current runs up one arm, into your chest, and down the other arm is eliminated.

5.2 Mechanical safety

i. When using compressed air, always use authorised nozzles and never aim the air directly at a person.

ii. Verify that guards are installed on equipment while it is in use.
iii. Use caution while working near or on hydraulic or pneumatically powered machinery.

iii. Unexpected or sudden movements might cause catastrophic injuries.

5.3 Chemical safety

i. Consider all chemicals to be potentially dangerous.

ii. Verify that all chemicals have up-to-date, legible labels that provide the name of the substance, its concentration, the date, and the name of the person in charge.

iii. Reagent bottles should never contain chemicals again. (Aim for the exact quantity and distribute any extra.)

iv. Adhere to fire codes pertaining to the number of storage spaces allowed, the kinds of cabinets and containers that are permitted, labelling requirements, etc. If you have any questions concerning the rules, speak with the building coordinator.

v. Only use fume hoods when handling flammable and volatile substances. It is best to carry out aerosol-producing procedures under a hood to avoid breathing in potentially dangerous materials.

vi. Avoid getting solvents on your skin at all times. Wear gloves at all times.

6.0 The Committee for Laboratory

The ACE-SPED testing laboratory activities are to be managed and overseen by the Laboratory Committee.

Establishment of the Laboratory Committee

i. The institution will form a Laboratory Committee, whose chairman will be the Head of Laboratory, who will also have general oversight over the Committee.

ii. The Committee's membership cannot consist of more than 9 people, including the, laboratory assistants/technicians, a students/partners representative, and any more members the Committee decides to add to the group.
iii. The Committee will convene on a regular basis; the Committee will decide how often to meet. The Committee is required to keep minutes of its meetings in addition to communications and activity logs.
iv. The Committee will set up a method for receiving direct reports and recommendations from partners and students on how the labs are run. When required, the Committee will see to it that those using the labs are suitably trained.

6.1 Committee Workings

i. Timetable: The Committee will decide how often it meets, but it will convene on a regular basis. The Committee is required to keep minutes of its meetings in addition to communications and activity logs.
ii. The schedule: At a Committee meeting, any member may add topics to the agenda for consideration. Papers that are pertinent will be sent ahead of time to give members enough time to be ready.
iii. Minutes must be sent to every member of the committee and posted for ACE-SPED staff members as well, Minutes are kept for a maximum of three years.
iv. Meeting Procedures: The chairperson will preside over meetings. The members present will elect a member to serve as Acting Chair in the event that the Chairperson is unable to lead the meeting.
v. Quorum: Half of the members who have been appointed shall constitute a quorum at regular meetings. A committee meeting may proceed in the absence of a quorum, but no formal votes may be taken.

7.0 Conclusion

In line with ISO 15189, management review is an important part of quality management systems.

i. Fulfilling client needs in accordance with ISO-accredited standards
ii. Adherence to both domestic and global norms.
iii. Timely submission of test results.
iv. Creating a conductive and safe work environment.
v. The security of lab workers.
vi. Ensuring that all staff members involved in the laboratory's testing activities are aware of the rules and procedures and follow them in their work.
vii. Adherence to ISO/IEC 17025:2017 standards and ongoing enhancement of the management system's efficacy.
viii. Professionally discuss test results and conclusions with customers, making sure that every problem is swiftly rectified and properly recorded.