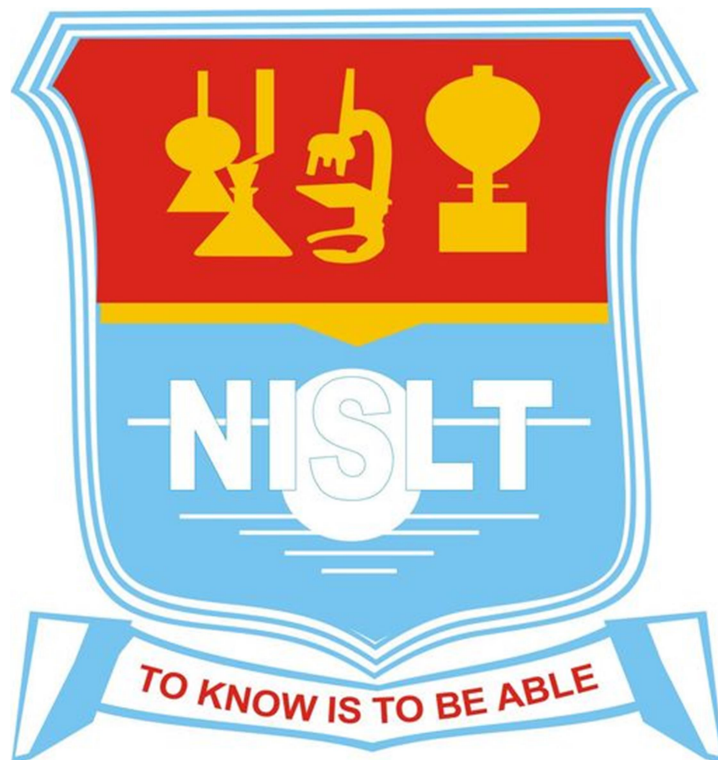


# **NIGERIAN INSTITUTE OF SCIENCE LABORATORY TECHNOLOGY (NISLT)**

**ESTABLISHED BY ACT 12, 2003**

**(Federal Ministry of Innovation, Science and Technology)**



## **MINIMUM GUIDELINES AND REQUIREMENTS FOR ESTABLISHMENT OF SCIENCE LABORATORY TECHNOLOGY PROGRAMME IN THE UNIVERSITY**

**Promoting and Maintaining Excellence in Science Laboratory  
Technology Education and Practice in Nigeria**

## 1.0 PREAMBLE:

Establishing Science Laboratory Technology degree program under the guidelines of the NISLT involves meeting stringent requirements to ensure high academic and professional standards. Adherence to these requirements is crucial for producing competent graduates who can contribute effectively to the scientific community.

The Nigerian Institute of Science Laboratory Technology is empowered by Act of the National Assembly (Act 12 of 2003), establishing the Institute with the mandate to *advance science laboratory technology profession* in Nigeria. The Nigerian Institute of Science Laboratory Technology (NISLT) sets specific requirements for the establishment of Science Laboratory Technology (SLT) degree program. These requirements ensure that the program adheres to professional standards and adequately prepares students for the field.

The Act also mandated the Institute among others to;

- a) determining the standards of knowledge, exposure to equipment, practical and skills, to be attained by persons seeking to become registered members of the profession and reviewing those standards, from time to time, as circumstances may require;
- b) promoting the highest standards of competence, practice and conduct among the members of the profession; among others.

The minimum requirements as specified by the NISLT Governing Council:

## 1. BASIC REQUIREMENT

### 1.1 Enabling Act/Law/Edict

Evidence of Law or Edict establishing the Institution.

### 1.2 Approval by the National Universities Commission

- i. The institution must secure approval by the national Universities Commission.
- ii. Evidence of resource verification with the NUC.

## 2. Curriculum Requirements

- i. **Program Structure:** The curriculum should be structured to include a balance of theoretical knowledge and practical skills. NUC BMAS/NISLT Mandatory Professional Examination Curriculum.
- ii. **General Laboratory Techniques (GLT):** The GLT courses should be taught by only qualified NISLT Professional holding current practicing license.
- iii. **Duration:** The SLT degree program is typically a five-year program, but the curriculum must include mandatory industrial training and research projects.
- iv. **Degree Award:** The degree of SLT shall be awarded for graduate of SLT. i.e. *Bachelor of Science Laboratory Technology (Physics with Electronics Option)*.  
*BSLT (Physics with Electronics Option)*

### 3. Staffing Requirements

i. **Head of Department:** The Head of Department should have background in Science Laboratory Technology (SLT) first degree/HND/Final Diploma and hold a PhD. The HOD should be registered and licensed with the Council of Nigerian Institute of Science Laboratory Technology (NISLT).

ii. **Academic Staff:**

**Educational Qualifications:** Candidates should possess relevant academic qualifications with background in Science Laboratory Technology (SLT) (Final Diploma/HND/B.Sc/B.Tech in SLT). Possession of good first degree and a Master's degree in SLT or in a related option or a specialized area of Science Laboratory Technology. A Ph.D. in SLT or in a related option or a specialized area of Science Laboratory Technology is often preferred, especially for senior positions. NISLT Professional Practicing license (Associate or Fellowship) is mandatory. The Fellowship Certificate of the Institute should be accorded special recognition.

#### Available options

- Biology Technology
- Biochemistry Technology
- Chemistry Technology
- Chemical Petroleum Technology
- Geology Mining Technology
- Microbiology Technology
- Biotechnology Technology
- Physics/Electronics Technology
- Physiology/Pharmacology Technology

iii. **Experience:** Candidates should have substantial experience in laboratory practice, research, and teaching. Prior experience as a lecturer or instructor, preferably at the university level, is highly beneficial. Practical experience in laboratory management, quality assurance, and research project supervision is also valuable.

iv. **NISLT License:** Candidates should hold a valid license issued by the Nigerian Institute of Science Laboratory Technology (NISLT). This license demonstrates the individual's competence and compliance with professional standards in laboratory practice. It ensures that the candidate has undergone the necessary training and assessment to practice as a professional in the field.

v. **Teaching Skills:** Strong communication and teaching skills are essential for university lecturers. Candidates should demonstrate the ability to effectively convey complex scientific concepts, facilitate discussions, and engage students in laboratory activities. Teaching experience or training in pedagogy and instructional design is advantageous.

- vi. **Research Track Record:** Candidates should have a track record of research publications and contributions to the field of Science Laboratory Technology or a related discipline. Active involvement in research projects, grant writing, and participation in academic conferences indicates a commitment to advancing knowledge in the field.
- vii. **Professional Ethics:** Candidates should adhere to high ethical standards in laboratory practice, research, and teaching. They should demonstrate integrity, professionalism, and a commitment to upholding ethical guidelines and regulations governing scientific research and education.
- viii. **Continuous Professional Development:** Candidates should show a commitment to continuous professional development by staying updated on advancements in laboratory technology, research methodologies, and teaching strategies. Participation in workshops, seminars, and professional development programs enhances competence and ensures relevance in the rapidly evolving field of science.
- ix. **Staff/Student Ratio:** The guidelines on academic staff/student ratio of 1:20 for Science Programmes shall apply. To start any option of the Science Laboratory Technology, there should be a minimum of four academic staff for the option. There is need to have a reasonable number of staff with PhD degrees accounting for at least 70% of the total number and having adequate teaching experience for every option in the Discipline. This will be in the ratio of **1:2:3**, which is translated into one coming from:
- Professor/Reader 1
  - Senior Lecturers 2
  - Lecturers 1 and below 3 (at least two with Ph.D)

**Entre Point:**

**Assistant Lecturer:** Background in SLT with Possession of a good first degree registrable with NISLT, plus Associate/Fellow Membership of NISLT.

**Lecturer II:** Background in SLT with Possession of a good first degree registrable with NISLT, plus Associate/Fellow Membership of the NISLT with a Master's degree in SLT or in a related option or a specialized area of Science Laboratory Technology.

**Lecturer I:** Background in SLT with Possession of a good first degree registrable with NISLT, plus Associate/Fellow Membership of the NISLT with a Master's degree and PhD in SLT or in a

related option or a specialized area of Science Laboratory Technology with adequate publications

### Office Facilities

#### Lecturer

| S/No | Office          | No in Room | Facilities                                                                                                                                                                            |
|------|-----------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | HOD             | 1          | Table, chairs, A/C, filing cabinet, bookshelves/mini-Library, computer unit, Secretary, visitor chairs, internet facilities, alternative power supply and other necessary facilities. |
| 2.   | Professor       | 1          | Table, chairs, A/C, filing cabinet, bookshelves, computer unit, visitor chairs, internet facilities, alternative power supply and other necessary facilities.                         |
| 3.   | Reader          | 1          | Table, chairs, A/C, filing cabinet, bookshelves, computer unit.                                                                                                                       |
| 4.   | Senior Lecturer | 1          | Table, chairs, A/C, filing cabinet, bookshelves, computer unit.                                                                                                                       |
| 5.   | Lecturer I      | 2          | Table, chairs, fan, filing cabinet, bookshelves.                                                                                                                                      |
| 6.   | Lecturer II     | 3          | Table, chairs, fan, filing cabinet, bookshelves                                                                                                                                       |

#### Laboratory Technology/Scientist

|    |                                                 |   |                                                                 |
|----|-------------------------------------------------|---|-----------------------------------------------------------------|
| 7. | Chief Laboratory Technology/Scientist and above | 1 | Table, chairs, A/C, filing cabinet, bookshelves, computer unit. |
| 8. | Other Laboratory Technology/Scientist           | 2 | Table, chairs, fan, filing cabinet, bookshelves.                |

- x. **Lecturer/Students' ratio:** For Bachelor of Science Laboratory Technology (*BSLT*) degree, the Governing Council of Nigerian Institute of Science Laboratory Technology approved Lecturer/Students' ratio is 1:20 students
- xi. **Academic Staff Mix:** The Academic staff mix by rank should meet the minimum of 20:35:45 for professorial/Senior lectureship/others.
- xii. **Complement of Lecturers:** There must be a full complement of Lecturer with a minimum of Masters Degree in the different specializations/Techniques of SLT as specified in the approved curriculum.
- xiii. **Professional Laboratory Staff:**
- o **Technical Staff:** Adequate technical staff in the different specializations/Techniques of SLT as specified in the approved curriculum should include laboratory Scientists/Technologists and technicians, must be available to support laboratory sessions Demonstration of practical and ensure proper maintenance of equipment.

- Each workshop or laboratory should have an adequate number of staff with the right mix, such that each unit or section in that workshop or laboratory can run efficiently;
- - i. Laboratory Technologist (2)
  - ii. Laboratory Assistant (3)

#### **Student/Staff Ratio**

- The minimum staff-to-student ratio should be 1:20 from 200 level to 500 level.
  - **Laboratory Scientist:**
    - i. Laboratory Scientist should possess BSc. SLT or B.Tech. SLT or HND SLT plus M.Sc. or equivalent qualification in the option and must be registered and hold current professional Annual practicing license (APL).
  - **Laboratory Instructor:**
    - i. Laboratory Instructor should possess HND SLT plus PGD or equivalent qualification in the option and must be registered and hold current professional Annual practicing license (APL).
  - **Laboratory Technologist**
    - i. Laboratory Technologist should possess HND or equivalent qualification in the option and hold current professional Annual practicing license (APL).
- xiv. **Non-Professional Laboratory Staff**
- **Laboratory Technician**
    - i. Laboratory Technicians should possess ND or equivalent qualification in Science Laboratory Technology and should register as Ordinary Member of the professional body.
  - **Laboratory Assistant**
    - i. Laboratory Assistant should possess five Ordinary Level credits pass including Mathematics, English and minimum of two science subjects from Chemistry, Biology and Physics plus a least a Basic Certificate in Laboratory Science or equivalent.
- xv. **Secretarial Staff:** There must be a full complement of administrative and secretarial staff for the programme.
- xvi. **Continuous Professional Development:** Provision for continuous professional development and training for all staff members.

#### **4. Facilities and Equipment**

There must be a befitting accommodation for the department which consists of the following:

- i. **Laboratories:** Well-equipped laboratories for various specializations within the SLT program. Each laboratory must meet specific standards for space, safety, and equipment.
- ii. **Laboratory Equipment, Materials and Reagent:** Required Laboratory Equipment, materials and reagents should be provided. (NISLT Laboratory Equipment, Materials and Reagent List).
- iii. **Workshop:** There is need for adequately furnished Glass blowing workshop/Laboratory.
- iv. **Botanical Garden:** A well-structured botanical garden is required for the programme.
- v. **Animal House:** There is need for provision of experimental animal house.
- vi. **Metrological Station:** A well-equipped metrological station should be available.
- vii. **Classrooms:** Adequate number of classrooms and lecture halls that are well-furnished and conducive to learning for the various options/techniques. Large classrooms/lecture theatre/auditorium, tutorial rooms and seminar rooms.
- viii. **Library:**
  - University Central Library
  - A college/Faculty/Departmental Library with Relevant, current literary materials and resources.
  - Access to a library with an extensive collection of relevant textbooks, journals, and digital resources.
  - All SLT departments must have its own dedicated library/resource room in addition to the Institutions general university library.
  - The library/resource room must be large enough to accommodate at least 15% of the student population in the department.
  - Its stock of books, journals and resource materials must be broad and relevant to the available learning options.
  - Its stock should include relevant current journals and internet linked computers that allow access to journals globally.
- ix. **Departmental Conference Room:** There should be an adequately furnished Conference Room where Departmental and committee meetings take place.
- x. **Office Accommodation:**
  - Adequately furnished Office for the Head of Department with an attached confidential secretary's office and administrative staff office. (Head of Department's Office - 18.50m<sup>2</sup>)
  - Adequately furnished offices for lecturers Teaching Staff Space - 7.00m<sup>2</sup>
  - Adequately furnished offices for Senior Laboratory Personnel Staff Space - 7.00m<sup>2</sup>
  - Adequate number of toilets and convenience properly labeled male and female should be provided.

## 5. Student Admission Requirements

- **Entry Qualifications:** Students must meet the institution's general admission requirements and possess relevant secondary school certificates with credits in science subjects.

- **Capacity:** The institution must demonstrate that it can accommodate and effectively train the number of students admitted to the program. A quota for SLT students to be admitted will be given to the institution by the NISLT Council based on the available resources.

## 6. Quality Assurance

- **Internal Review:** Regular internal reviews and updates of the curriculum to keep pace with scientific advancements and industry requirements.
- **External Evaluation:** Participation in external evaluations conducted by NISLT and other accrediting bodies to ensure ongoing compliance with standards.

## 7. Industrial Collaboration and Training

- **Partnerships:** Establishment of partnerships with industries and research institutions to facilitate industrial training and collaborative research.
- **Internships:** Mandatory industrial training or internships as part of the curriculum to provide students with hands-on experience.

## 8. Research and Development

- **Research Opportunities:** Provision of facilities and funding for research activities.
- **Publication:** Encouragement and support for faculty and students to publish research findings in reputable journals.

## 9. Financial Resources

- **Adequate Funding:** Ensuring there is adequate funding to support the establishment and maintenance of the program, including staff salaries and operational costs.
- **Grants and Sponsorships:** Seeking grants and sponsorships from governmental and non-governmental organizations to supplement funding.

## 10. Mandatory Professional Examination (MPE):

Accredited institution will be admitted by the NISLT Council to enroll eligible students for the NISLT professional examinations after fulfilling necessary requirements. Only students that pass the MPE examination shall be inducted into the profession.

## 11. Safety and Environmental Standards

- **Laboratory Safety:** Adherence to safety standards in all laboratory practices, including the proper disposal of hazardous materials.
- **Environmental Compliance:** Ensuring that all activities comply with environmental regulations and standards.

## A. Steps to Establish the Program:

1. **Initial Planning:** Conduct a needs assessment and feasibility study to determine the viability of the SLT program.
2. **Proposal Development:** Prepare a comprehensive proposal outlining the curriculum, staff qualifications, facilities, and financial plans.
3. **Submission to NISLT:** Submit the proposal and a letter of intent to the NISLT for review and approval.



4. **Site Inspection:** NISLT will conduct a site/Resource inspection to verify the readiness of the institution.
5. **Approval and Accreditation:** Upon meeting all the requirements, the NISLT will grant approval and accreditation for the program.

**B. Faculty/School, Departments and Structure:**

- a. Any Institution running Science Laboratory Technology programme and have more than four (4) options should transit to a faculty/school of Science Laboratory Technology.
- b. **Faculty/School of Science Laboratory Technology with the following programme/Options:**
  - i. BSLT Biology Technology
  - ii. BSLT Biochemistry Technology
  - iii. BSLT Chemistry Technology
  - iv. BSLT Chemical Petroleum Technology
  - v. BSLT Geology Mining Technology
  - vi. BSLT Microbiology Technology
  - vii. BSLT Biotechnology Technology
  - viii. BSLT Physics with Electronics Technology
  - ix. BSLT Physiology Pharmacology Technology

NISLT DOCUMENT

# NIGERIAN INSTITUTE OF SCIENCE LABORATORY TECHNOLOGY

## (Federal Ministry of Innovation, Science and Technology)

### DOCUMENTS REQUIRED FOR PROFESSIONAL RESOURCE VERIFICATION/ACCREDITATION CHECK LIST

| S/N | ITEMS                                                                                                                                                                                                                         | REMARK |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 1.  | NISLT Self-study form                                                                                                                                                                                                         |        |
| 2.  | Adequacy of office accommodation i.e. Number of lecturers with/without office accommodation(s)                                                                                                                                |        |
| 3.  | Adequacy of office furniture/equipment                                                                                                                                                                                        |        |
| 4.  | Availability of fire extinguishers/sand buckets and their functionalities (Emergency Shower etc)                                                                                                                              |        |
| 5.  | Availability of seats and basic classroom facilities and their functionalities.                                                                                                                                               |        |
| 6.  | Budget                                                                                                                                                                                                                        |        |
| 7.  | Departmental Handbook reflecting the aims and objectives, philosophy. Curriculum, academic rules and regulations and so on.                                                                                                   |        |
| 8.  | E-resources available                                                                                                                                                                                                         |        |
| 9.  | Examination/Lecture time table (where applicable)                                                                                                                                                                             |        |
| 10. | Files for continuous assessment tests.                                                                                                                                                                                        |        |
| 11. | Files for course content and distribution on weekly basis                                                                                                                                                                     |        |
| 12. | Files for marking schemes.                                                                                                                                                                                                    |        |
| 13. | Files for past examination questions and tests.                                                                                                                                                                               |        |
| 14. | Files for Departmental Meetings                                                                                                                                                                                               |        |
| 15. | Laboratory Manuals for practical work                                                                                                                                                                                         |        |
| 16. | List of academic staff that have attended conferences, workshops or under sponsorship for postgraduate training.                                                                                                              |        |
| 17. | List of Laboratory Scientists/Technologists that have attended conferences, workshops or under sponsorship for Specialized/postgraduate training.                                                                             |        |
| 18. | List of academic staff with or without NISLT registration Number and current Annual Practicing License<br>Status of each academic staff, degrees and awarding institution.<br>Note: The staff students' ratio for SLT is 1:20 |        |
| 19. | List of Laboratory Scientists/Technologists that have NISLT registration Number and current Annual Practicing License                                                                                                         |        |
| 20. | List of books/journals in the University and Departmental library relevant to the programme(s)                                                                                                                                |        |
| 21. | Lists of laboratory equipment, consumables, tools and field vehicles (where applicable)                                                                                                                                       |        |
| 22. | Name and Status of Heads of Academic Departments                                                                                                                                                                              |        |
| 23. | Number of Academic staff and their files containing their appointment letters.                                                                                                                                                |        |
| 24. | Number of Laboratory Scientists/Technologists and their files containing their appointment letters.                                                                                                                           |        |
| 25. | Number of Academic staff with PhD. At least, 70% of the staff must possess Ph.D                                                                                                                                               |        |
| 26. | Number of Administrative/technical staff/technologist in the programme(s)                                                                                                                                                     |        |

|            |                                                                                                       |  |
|------------|-------------------------------------------------------------------------------------------------------|--|
| <b>27.</b> | Number of classrooms/lecture theatres used for the programme (s)                                      |  |
| <b>28.</b> | Number of laboratories for the programme(s)                                                           |  |
| <b>29.</b> | Number of offices and sizes                                                                           |  |
| <b>30.</b> | Number of students registered for the programme(s) and their files containing the admission documents |  |
| <b>31.</b> | Size of each laboratory.                                                                              |  |
| <b>32.</b> | Sizes of the Classrooms and sitting capacity                                                          |  |
| <b>33.</b> | State of the environment of the campus and accessibility<br>Computer/ICT Laboratory                   |  |
| <b>34.</b> | Students' Examination answer sheets/booklets                                                          |  |

NISLT DOCUMENT

### NISLT Evaluation Scoring Chart

| S/N | ITEMS                                                                       | MAX POINTS   | MARK SCORED % | GRADE |
|-----|-----------------------------------------------------------------------------|--------------|---------------|-------|
| 1.  | HOD, has SLT background with Current Professional License                   | 10           |               |       |
| 2.  | All Teaching staff have background in SLT with current Professional License | 10           |               |       |
| 3.  | GLT courses are taught by Licensed professionals                            | 10           |               |       |
| 4.  | Adequate qualified Laboratory Technologists/Scientists                      | 5            |               |       |
| 5.  | Laboratory Technologists/Scientists with Current practicing license         | 5            |               |       |
| 6.  | Curriculum reflect core SLT mandate                                         | 10           |               |       |
| 7.  | Class rooms are adequate for teaching SLT Courses                           | 10           |               |       |
| 8.  | Laboratories are purpose built                                              | 5            |               |       |
| 9.  | Adequacy of Laboratories                                                    | 5            |               |       |
| 10. | Students have adequate knowledge of NISLT                                   | 10           |               |       |
| 11. | Relevant Equipment are provided in the Laboratories                         | 10           |               |       |
| 12. | Library has adequate books and Journals for SLT options                     | 10           |               |       |
|     |                                                                             | <b>Total</b> |               |       |