

Tanzania Bureau of Standards



TRAINING CATALOGUE

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Introduction

Tanzania Bureau of Standards (TBS) is a parastatal organization established under the Ministry of Industry and Trade by an Act of Parliament, the Standards Act No. 3 of 1975, later repealed and replaced by the Standards Act No. 2 of 2009. TBS was established as part of the efforts by the Government to strengthen its supporting institutional infrastructure for the industry and commerce sectors of the economy.

Vision, mission and core values

Vision

“Sustainable standardization for high quality livelihood society”

Mission

“To promote standardization, safety and quality assurance in industry and commerce through standards development, certification, registration, inspection, testing and metrology services for sustainable socio-economic development”

Quality Policy

Tanzania Bureau of Standards endeavours, as mandated, to deliver quality products and services on standardization, safety management, conformity assessment and metrology by meeting legal and customers’ requirements and even exceeding customers’ expectations so as to retain their royalty. TBS provides resources and continually improves her processes to ensure that employees are capable of timely and consistently providing quality products and services.

Core Values

Integrity

We ensure continuous and consistent provision of services with high degree of honesty and impartiality by adhering to moral and ethical principles and values.

Customer focused

We prioritize customers’ needs first, therefore committed to responding timely and proactively to their expectations.

Team Work

We work together by sharing experiences while respecting each other to realize institutional goals.

Accountability

We shall be responsible to our actions, decisions and outcomes in executing our functions.

Transparency

We ensure open sharing of information and proper provision of feedback to our stakeholders in equal treatment.

Training services

Tanzania Bureau of Standards, through the Research and Training Section, is engaged in imparting useful knowledge in the area of standardization, safety and quality assurance, testing and metrology. We proudly continue to provide training services through our outcome-based courses. As part of our training delivery, the following are the areas of the current courses offered.

A: PUBLIC TRAINING

1.0 AWARENESS ON QUALITY MANAGEMENT SYSTEM (QMS) – ISO 9001

1.1 Duration: One day

1.2 Target participants: Policy makers, board members, directors, managers, business owners, business executives, entrepreneurs and other decision makers

1.3 Course outline: Basic concepts of quality management system:

Risk based thinking;

Plan-Do-Check-Act cycle (PDCA);

Process approach;

Quality management principles and their application;

Leadership and commitment;

Quality policy and quality objectives;

Impact of ISO 9001 certification to business operations;

Roadmap to ISO 9001 certification; and

Benefits of QMS.

1.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and presentation.

1.5 Benefits of the course:

After successful completion of this course, participants will be able to:

make informed decisions on implementation of the ISO 9001 standard requirements;

improve interactive processes; and

identify risks and opportunities associated with business processes.

1.6 Course fee:

The course fee is **TZS 200,000/- per person for Tanzanians and USD 200 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries,

food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

2.0 REQUIREMENTS ON QUALITY MANAGEMENT SYSTEM (ISO 9001)

2.1 Duration: Five working days

2.2 Target participants: All personnel working in organizations or industries and any other interested individuals

2.3 Course outline:

- Introduction and principles of quality management system;
- Basic concepts of quality management system;
- Context of the organization;
- Leadership;
- Planning;
- Support;
- Operations;
- Performance evaluation;
- Improvement; and
- Importance of quality management system.

2.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and presentation.

2.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret and implement the requirements of the standard;
- manage organizational/business processes;
- reduce waste in organization/business;
- increase productivity and profit; and
- provide consistent outcomes.

2.6 Course requirements: Each participant shall have a laptop.

2.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

2.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

3.0 INTERNAL AUDIT BASED ON QUALITY MANAGEMENT SYSTEM (ISO 9001)

3.1 Duration: Five working days

3.2 Target participant: Interested individuals with knowledge in quality management system working in organizations or industries

3.3 Course outline:

- Concept of internal audit:
- Recap of ISO 9001 – Internal audit requirements
- Audit type;
- Importance of internal audit;
- Audit principles as per ISO 19011; and
- Audit process:
- Preparation of internal audit;
- Execution of internal audit;
- Reporting of internal audit findings; and
- Follow-up on corrective action.

3.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and roleplaying.

3.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret requirements of the standards;
- initiate and prepare audit activities;
- execute internal audits;
- document and report audit findings; and
- conduct follow-up audits.

3.6 Course requirements:

Each participant shall have a laptop; and

Participants shall have prior knowledge on ISO 9001 standard requirements.

3.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

3.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

4.0 AWARENESS ON ENVIRONMENTAL MANAGEMENT SYSTEM (ISO 14001)

4.1 Duration: One day

24.2 Target participants: Policy makers, board members, directors, managers, business owners, business executives, entrepreneurs and other decision makers

4.3 Course outline:

- Basic Concept on ISO 14001;
- Plan-Do-Check-Act cycle (PDCA);
- Process approach;
- Risk-based thinking;
- Standards requirements – ISO 14001;
- Importance of environmental management system; and
- Roadmap to ISO 14001 certification.

4.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and presentation.

4.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- make informed decisions on implementation of the ISO 14001 standard requirements;
- improve process interaction;
- comply with statutory and regulatory requirements;
- identify risks and opportunities associated with business processes; and
- minimize environmental impact.

4.6 Course fee:

The course fee is **TZS 200,000/- per person for Tanzanians and USD 200 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

5.0 REQUIREMENTS ON ENVIRONMENTAL MANAGEMENT SYSTEM (ISO 14001)

5.1 Duration: Five working days

5.2 Target participants: All personnel working in organizations or industries and any other interested individuals

5.3 Course outline:

- Introduction to environmental management system;
- Standard requirements;
- Context of the organization;
- Leadership;
- Planning;
- Support;
- Operations;
- Performance evaluation;
- Improvement; and

- Importance of environmental management system.

5.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and presentation.

5.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret and implement the requirements of the standard;
- comply with statutory and regulatory requirements;
- identify, control and reduce the number of environmental incidents that occur within the organization;
- improve and maintain environmental management; and
- improve resource efficiency and reduce waste.

5.6 Course requirements: Each participant shall have a laptop.

5.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

5.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable.** The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

6.0 INTERNAL AUDIT ON ENVIRONMENTAL MANAGEMENT SYSTEM (ISO 14001)

6.1 Duration: Five working days

6.2 Target participants: Interested individuals with knowledge in quality management system working in organizations or industries.

6.3 Course outline:

- Concept of ISO 14001:
- Recap of ISO 14001– Internal audit requirements;

- Audit types;
- Importance of internal audit;
- Audit principles as per ISO 19011;
- Audit process:
- Preparation of internal audit;
- Execution of internal audit;
- Reporting of internal audit findings; and
- Follow-up on corrective action.

6.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and roleplaying.

6.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret the requirements of the standards;
- initiate and prepare audit activities;
- execute internal audits;
- document and report audit findings;
- conduct follow-up audits; and
- identify areas for improvement on environmental management.

6.6 Course requirements:

Each participant shall have a laptop; and

Participants shall have prior knowledge on ISO 14001 standard requirements.

6.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

6.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable.** The fee shall cover tuition fee, training materials, stationeries,

food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

7.0 AWARENESS ON FOOD SAFETY MANAGEMENT SYSTEM (ISO 22000)

7.1 Duration: One day

7.2 Target participants: Policy makers, board members, directors, managers, business owners, business executives, entrepreneurs and other decision makers

7.3 Course outline:

- Basic concepts on food safety management system;
- General requirements;
- Benefits of food safety management system to businesses, society and governments;
- Impact of ISO 22000 certification to business operations; and
- Roadmap to ISO 22000 certification.

7.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and presentation.

7.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- make informed decisions on implementation of the ISO 22000 standard requirements;
- ensure safety of food products;
- improve process interaction;
- comply with statutory and regulatory requirements; and
- identify risks and opportunities associated with business processes.

7.6 Course fee:

The course fee is **TZS 200,000/- per person for Tanzanians and USD 200 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

8.0 REQUIREMENTS OF ISO 22000 – FOOD SAFETY MANAGEMENT SYSTEM

8.1 Duration: Five working days

8.2 Target participants: Scientists, researchers, food technologists, quality assurance personnel, microbiologists, chemists, food safety officers, public health officers, quality control personnel and food processors

8.3 Course Outline:

- Concept of food safety;
- Standard requirements;
- Context of the organization;
- Leadership;
- Planning;
- Support;
- Operation;
- Performance evaluation;
- Improvement; and
- Benefit of implementation of ISO 22000.

8.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

8.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret the requirements of the standard; and
- implement the requirements of the standard.

8.6 Course requirements: Each participant shall have a laptop.

8.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

8.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

9.0 INTERNAL AUDITORS ON ISO 22000 – FOOD SAFETY MANAGEMENT SYSTEM

9.1 Duration: Five working days

9.2 Target participants: Scientists, researchers, food technologists, quality assurance personnel, microbiologists, chemists, food safety officers, public health officers, quality control personnel and food processors

9.3 Course outline:

- Recap of ISO 22000 requirements;
- Concept of internal audit;
- Audit principles as per ISO 19011; and
- Auditing process:
- Preparation of internal audit plan;
- Execution of internal audit; and
- Reporting of internal audit findings.

9.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and roleplaying.

9.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- plan for internal audits;
- execute internal audits;
- report internal audit findings; and
- make follow up of corrective actions.

9.6 Course requirements:

Each participant shall have a laptop; and

Participants shall have prior knowledge on ISO 22000 requirements.

9.7 Course assessment awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

9.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

10.0 GOOD MANUFACTURING AND HYGIENE PRACTICES (GMP & GHP) FOR FOOD INDUSTRY

10.1 Duration: Three days

10.2 Target participants: Scientists, researchers, food technologists, quality assurance personnel, microbiologists, chemists, food safety officers, public health officers, quality control personnel and food processors

10.3 Course outline:

- Concept of best practices along the food value chain;
- Principles of GMP;
- Principles of GHP; and
- Benefits of GMP and GHP.

10.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

10.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- comply with regulatory requirements;
- implement GMP and GHP principles;
- demonstrate competence towards certification; and
- provide products and services with consistent quality.

10.6 Course requirements: Each participant shall have a laptop.

10.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

10.8 Course fee:

The course fee is **TZS 300,000/- per person for Tanzanians and USD 300 per person for foreigners non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

11.0 HAZARD ANALYSIS AND CRITICAL CONTROL POINTS (HACCP)

11.1 Duration: Five working days

11.2 Target participants: Scientists, researchers, food technologists, quality assurance personnel, microbiologists, chemists, food safety officers, public health officers, quality control personnel and food processors

11.3 Course outline:

- Concept of food safety;
- Requirements of standards (TZS 1770):
- Documentation requirements for implementation of HACCP;
- Management responsibilities;
- Implementation requirements;
- Development and application of HACCP plan; and
- Benefit of implementation of HACCP.

11.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

11.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret the requirements of the standard;
- implement the requirements of the standard;
- identify critical control points; and

- develop monitoring plan.

11.6 Course requirements: Each participant shall have a laptop.

11.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

11.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

12.0 MANUFACTURING QUALITY SYSTEM

12.1 Duration: Five working days

12.2 Target participants: Industrial production managers, supervisors and quality control managers

12.3 Course outline:

- Quality assurance and quality control
- Process flow
- Production and quality control (critical control points identification);
- Quality control tools
- Problem solving techniques
- Inventory control
- Facilities layout
- Key performance indicators (KPIs)

12.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

12.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- effectively utilize the available resources;
- increase productivity;
- increase production efficiency;
- identify and monitor critical control points; and
- improve products' quality.

12.6 Course requirements: Each participant shall have a laptop.

12.7 Course assessment and award:

A participant who fully attends the course and participates in group works and individual assignments shall be awarded a certificate of attendance.

12.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationaries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses

13.0 QUALITY PACKAGING

13.1 Duration: Five working days

13.2 Target participants: Manufacturers, processors, transporters, exporters and other interested parties

13.3 Course outline:

- Introduction to quality packaging;
- Quality packaging requirements;
- Types of packages;
- Packaging materials and their application;
- Concept of packaging designs and functions;
- Marking and labelling; and
- Packaging technology laboratory visit.

13.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

13.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- identify basic quality package requirements;
- classify types of packages and packaging materials and their respective functions;
- identify appropriate packaging materials for various products;
- select appropriate package designs; and
- apply appropriate marking and labelling for respective packaged products.

13.6 Course requirements: Each participant shall have a laptop.

13.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

13.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

14.0 GOOD LABORATORY PRACTICES (GLP)

14.1 Duration: Five working days

14.2 Target participants: Laboratory analysts, laboratory technicians, chemists, microbiologists, metrologists, quality control and quality assurance officers, laboratory quality managers, manufacturing quality control personnel and other related professionals

14.3 Course outline:

- Introduction to good laboratory practices;
- Principles of good laboratory practices;
- Importance of good laboratory practices;
- Laboratory safety and housekeeping;
- Laboratory inventory management;
- Handling of laboratory chemicals, reagents and infectious materials; and
- Waste management.

14.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

14.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- plan, perform, monitor, record and report laboratory activities;
- prevent unsafe and hazardous acts which could affect individuals and/or property;
- improve the performance of laboratory activities;
- properly handle chemicals and waste; and
- comply with statutory and regulatory requirements.

14.6 Course requirements: Each participant shall have a laptop.

14.7 Course assessment and award:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

14.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

15.0 LABORATORY EQUIPMENT MANAGEMENT

15.1 Duration: Five working days

15.2 Target participants: Laboratory analysts, metrologists, scientists, researchers, laboratory technicians, laboratory technologists, quality assurance personnel, microbiologists, laboratory managers, chemists, quality control personnel and any other related professionals.

15.3 Course outline:

- Concept of laboratory equipment management;
- Components of laboratory equipment management;
- User specification requirements;

- Installation qualifications (IQ);
- Operational qualifications (OQ);
- Performance qualifications (PQ);
- Minor troubleshooting and preventive maintenance;
- Calibration and verification; and
- Retirement and disposal of equipment.

15.4 Course presentation and methodology:

Course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

15.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- identify user requirements during selection and purchasing processes;
- maintain equipment documentation;
- prepare and implement maintenance schedule and equipment inventory;
- perform equipment qualifications;
- identify cause of problem and take corrective action;
- use equipment manual for minor troubleshooting and preventive maintenance; and
- develop calibration and verification plan.

15.6 Course requirements: Each participant shall have a laptop and a calculator.

15.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

15.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

16.0 LABORATORY QUALITY CONTROL

16.1 Duration: Five working days

16.2 Target participants: Laboratory analysts, metrologists, scientists, researchers, laboratory technicians, laboratory technologists, quality assurance personnel, microbiologists, laboratory managers, chemists, quality control personnel and any other related professionals

NOTE: The course is not intended for medical laboratory personnel.

16.3 Course outline:

- Requirements of standards (ISO/IEC 17025:2017);
- Quality assurance and quality control;
- Quality control tools;
- Application and interpretation of control chart in laboratory; and
- Internal and external quality controls used in laboratories.

16.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and laboratory visit.

16.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- select and apply appropriate quality control tools in the laboratory;
- identify all potential sources of problem during analysis; and
- interpret control charts.

16.6 Course requirements: Each participant shall have a laptop and a calculator.

16.7 Course assessment awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

16.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

17.0 LABORATORY QUALITY SYSTEM DOCUMENTATION

17.1 Duration: Five working days

17.2 Target participants: Laboratory analysts, laboratory technicians, chemists, microbiologists, metrologists, quality control and quality assurance officers, laboratory quality managers, manufacturing quality control personnel and other related professionals

17.3 Course outline:

- Concepts of quality system;
- Documentation structure;
- Importance of quality system documentation;
- Preparation of laboratory quality system documents; and
- Quality system record keeping.

17.4 Course presentation and methodology

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

17.5 Benefits of the course

After successful completion of this course, participants will be able to:

- identify mandatory quality system documents in the processes;
- prepare quality system documents; and
- manage documents and records generated in the processes.

17.6 Course requirements: Each participant shall have a laptop.

17.7 Course assessment and awards

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

17.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

18.0 MONITORING AND EVALUATION OF LABORATORY ACTIVITIES

18.1 Duration: Five working days

18.2 Target participants: Laboratory analysts, laboratory technicians, chemists, microbiologists, metrologists, quality control and quality assurance officers, laboratory quality managers, manufacturing quality control personnel and other related professionals

18.3 Course outline:

- Concept of monitoring and evaluation;
- Basic principles of monitoring and evaluation;
- Preparation of monitoring plan;
- Quality and performance indicators;
- Monitoring and evaluation process in the laboratory; and
- Reporting of monitoring and evaluation.

18.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

18.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- identify laboratory activities which require monitoring and evaluation;
- design laboratory activities using logical framework;
- develop monitoring and evaluation plan;
- perform monitoring and evaluation process;
- undertake documentation of monitoring and evaluation process; and
- identify areas for improvement in the laboratory.

18.6 Course requirements: Each participant shall have a laptop.

18.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

18.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

19.0 ENVIRONMENTAL LABELS AND CARBON FOOTPRINT OF PRODUCTS (CFP)

19.1 Duration: Five working days

19.2 Target participants: Business owners, entrepreneurs, exporters, industrialists, producers, regulators and other interested parties

19.3 Course outline:

- Concepts of eco-labelling and carbon footprint;
- Standards requirements (ISO 14022 and ISO 14067);
- Definition and classification;
- Eco-labelling symbols;
- Results of eco-labelling;
- Evaluating the classification system;
- Importance of eco-labelling;
- Requirement and guideline for quantification of carbon footprint; and
- Reporting of carbon footprint.

19.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

19.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret the requirements and identify benefits of environmental labels;
- understand the importance of carbon footprint to the products;
- create new value chain by establishing new networks of production;
- mark appropriate environmental claims on products;
- influence customer behavior towards more environmentally friendly products; and
- access global markets.

19.6 Course requirements: Each participant shall have a laptop.

19.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

19.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

20.0 AWARENESS ON GENERAL REQUIREMENTS FOR THE COMPETENCE OF TESTING AND CALIBRATION LABORATORIES (ISO/IEC 17025)

20.1 Duration: One day

20.2 Target participants: Policy makers, board members, directors, managers, business owners, executives and quality managers

20.3 Course outline:

- Basic concept of ISO/IEC 17025;
- General requirements for laboratory management system;
- Risk-based thinking;
- Importance of implementation of ISO/IEC 17025; and
- Roadmap towards accreditation.

20.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

20.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- make informed decisions on implementation of the ISO/IEC 17025 standard requirements;
- identify risks and opportunities associated with processes; and
- know the importance of accreditation.

20.6 Course fee:

The course fee is **TZS 200,000/- per person for Tanzanians and USD 200 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

21.0 REQUIREMENTS FOR THE COMPETENCE OF TESTING AND CALIBRATION LABORATORIES (ISO/IEC 17025)

21.1 Duration: Five working days

21.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, chemists, laboratory technologists, microbiologists, metrologists, quality control and quality assurance officers, laboratory quality managers and any other related professionals

21.3 Course outline:

- Introduction to ISO/IEC 17025:
- Concept of risk-based thinking;
- Scope;
- Requirements of the ISO/IEC 17025 standard:
- General requirements;
- Structural requirements;
- Resources requirements;
- Process requirements;
- Management requirements; and
- Importance of implementation of ISO/IEC 17025.

21.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainee and group participation.

21.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret and implement the requirements of the standard;
- improve and maintain laboratory management system;
- identify mandatory documents for implementing the system; and

- develop a quality system which can improve laboratory operations to meet customer needs.

21.6 Course requirements: Each participant shall have a laptop.

21.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

21.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

22.0 INTERNAL AUDIT ON THE REQUIREMENTS FOR THE COMPETENCE OF TESTING AND CALIBRATION LABORATORIES (ISO/IEC 17025)

22.1 Duration: Five working days

22.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, chemists, metrologists, laboratory technologists, microbiologists, quality control and quality assurance officers, laboratory quality managers and any other related professionals

22.3 Course outline:

- Concept of ISO/IEC 17025:
- Recap of ISO/IEC 17025 – Internal audit requirements;
- Audit types;
- Importance of internal audit;
- Concept of ISO/IEC 17025;
- Recap of ISO/IEC 17025 – Internal audit requirements;
- Audit types;
- Importance of internal audit;
- Audit principles as per ISO 19011; and
- Audit process:
- Preparation of internal audit;

- Execution of internal audit;
- Reporting of internal audit findings; and
- Follow-up on corrective action.

22.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and roleplaying.

22.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret the requirements of the standard;
- initiate and prepare audit activities;
- execute internal audits;
- document and report audit findings;
- conduct follow-up audits; and
- identify areas for improvement in the laboratory.

22.6 Course requirements:

Each participant shall have a laptop; and

Participants shall have knowledge on ISO/IEC 17025 standard requirements.

22.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

22.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

23.0 AWARENESS ON QUALITY AND COMPETENCE FOR MEDICAL LABORATORIES (ISO 15189)

23.1 Duration: One day

23.2 Target participants: Policy makers, board members, directors, managers, business owners, business executives, medical practitioners, district medical officers, regional medical officers, hospital administrators and other decision makers

23.3 Course outline:

- Basic concept of ISO 15189;
- General requirements;
- Risk-based thinking;
- Importance of implementation of ISO 15189; and
- Roadmap towards accreditation.

23.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

23.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- make informed decisions on implementation of the ISO 15189 standard requirements;
- identify risks and opportunities associated with processes; and
- know the importance of accreditation.

23.6 Course fee:

The course fee is **TZS 200,000/- per person for Tanzanians and USD 200 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

24.0 REQUIREMENTS ON QUALITY AND COMPETENCE FOR MEDICAL LABORATORIES (ISO 15189)

24.1 Duration: Five working days

24.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, chemists, laboratory technologists, microbiologists, practitioners from medical laboratories and any other related professionals

24.3 Course outline:

- Introduction to ISO 15189;
- Risk based thinking;
- Management requirements;
- Technical requirements; and
- Importance of implementation of ISO 15189.

24.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

24.5 Benefits of the course

After successful completion of this course, participants will be able to:

- interpret and implement the requirements of the standard;
- improve and maintain medical laboratory management system;
- identify mandatory documents for implementing the system; and
- develop a quality system which can improve laboratory operations to meet customer needs.

24.6 Course requirements: Each participant shall have a laptop.

24.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

24.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

25.0 INTERNAL AUDIT ON QUALITY AND COMPETENCE OF MEDICAL LABORATORIES (ISO 15189)

25.1 Duration: Five working days

25.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, chemists, laboratory technologists, microbiologists, practitioners from medical laboratories and any other related professionals

25.3 Course Outline:

- Concept of ISO 15189:
- Recap of ISO 15189 – Internal audit requirements;
- Audit types;
- importance of internal audit;
- Audit principles as per ISO 19011; and
- Audit process:
 - ✓ Preparation of internal audit;
 - ✓ Execution of internal audit;
 - ✓ Reporting of internal audit findings; and
 - ✓ Follow-up on corrective action.

25.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and roleplaying.

25.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- interpret the requirements of the standard;
- initiate and prepare audit activities;
- execute internal audits;
- document and report audit findings;
- conduct follow-up audits; and
- identify areas for improvement in medical laboratory.

25.6 Course requirements:

Each participant shall have a laptop; and

Participants shall have prior knowledge on ISO 15189 standard requirements.

25.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

25.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

26.0 METROLOGY IN LABORATORIES

26.1 Duration: Five working days

26.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, chemists, laboratory technologists and other related professionals

26.3 Course outline:

- Standards requirements;
- Concept of metrology;
- Metrological/measurement results traceability;
- Calibration and verification of equipment; and
- Application of information from calibration certificate in daily analysis.

26.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

26.5 Benefits of the course:

After successful completion of this course, the participants will be able to:

- understand the concept of measurement traceability;
- plan for calibration and verification of laboratory equipment;
- interpret and use calibration results; and
- improve means of measurement.

26.6 Course requirements: Each participant shall have a laptop.

26.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

26.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover training materials, food and refreshments, stationeries and facilitation fee. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

27.0 MANAGEMENT OF RISKS AND OPPORTUNITIES IN THE LABORATORY

27.1 Duration: Five working days

27.2 Target participants: Laboratory analysts, laboratory technicians, chemists, microbiologists, metrologists, quality control and quality assurance officers, laboratory quality managers, manufacturing quality control personnel and other related professionals

27.3 Course outline:

- Introduction to risks and opportunities management;
- Risk management principles as per ISO 31000; and
- Risk and opportunity management process:
 - Identification;
 - Analysis;
 - Evaluation;
 - Treatment;
 - Monitoring; and
- Importance of risks and opportunities management

27.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

27.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- identify, analyze, evaluate, treat and monitor risks in their processes;
- manage risks and opportunities;
- perform documentation of risks and opportunities; and
- comply with statutory and regulatory requirements.

27.6 Course requirements: Each participant shall have a laptop.

27.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

27.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, training materials, stationeries, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

28.0 METHOD VALIDATION AND VERIFICATION FOR TESTING LABORATORIES

28.1 Duration: Five working days

28.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, chemists, laboratory technologists and any other related professionals

28.3 Course outline:

- Standards requirements,
- Statistics related to method validation;
- Selection of method;
- Verification vs validation;
- Performance characteristics;
- Reporting of validation and verification results; and
- Monitoring of validated/verified method.

28.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

28.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- develop validation or verification plan;
- select appropriate methods;
- perform validation or verification of method; and
- monitor performance of the method.

28.6 Course requirements:

Each participant shall have a laptop and a calculator; and

Participants shall have prior knowledge on ISO/IEC 17025:2017 standard requirements.

28.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

28.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

29.0 METHOD VALIDATION AND VERIFICATION FOR MICROBIOLOGY LABORATORIES

29.1 Duration: Five working days

29.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, microbiologists, laboratory technologists and any other related professionals

29.3 Course outline:

- Standards requirements;
- Statistics related to method validation;
- Selection of method;

- Verification vs validation;
- Performance characteristics;
- Reporting of validation and verification results; and
- Monitoring of validated/verified method.

29.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and practical sessions.

29.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- develop validation or verification plan;
- select appropriate methods;
- perform validation or verification of method; and
- monitor performance of the method.

29.6 Course requirements:

Each participant shall have a laptop and a calculator; and

Participants shall have knowledge on standards requirements.

29.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

29.8 Course fee:

The course fee is **TZS 750,000/- per person for Tanzanians and USD 750 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

30.0 UNCERTAINTY OF MEASUREMENTS FOR TESTING LABORATORIES

30.1 Duration: Five working days

30.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, chemists, laboratory technologists and any other related professionals

30.3 Course outline:

- Standards requirements;
- Uncertainty sources, types and estimation process;
- Measurement uncertainty evaluation (Approaches/model – GUM and NORDTEST); and
- Use of uncertainty in reporting test results.

30.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

30.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- differentiate types of uncertainty (Type A and Type B);
- identify uncertainty contributors;
- estimate uncertainties of measurements in the laboratory; and
- prepare uncertainty budget.

30.6 Course requirements: Each participant shall have a laptop and a calculator.

30.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

30.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

31.0 UNCERTAINTY OF MEASUREMENTS FOR MICROBIOLOGY LABORATORIES

31.1 Duration: Five working days

31.2 Target participants: Laboratory analysts, scientists, researchers, laboratory technicians, microbiologists, laboratory technologists and any other related professionals

31.3 Course outline:

Standards requirements;

- Uncertainty of measurements concept and significance;
- Uncertainty sources, types and estimation process;
- Quantification of measurement uncertainty; and
- Use of uncertainty in reporting test results.

31.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

31.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- differentiate types of uncertainty (Type A and Type B);
- identify uncertainty contributors;
- estimate uncertainties of measurement in the laboratory; and
- prepare uncertainty budget.

31.6 Course requirements: Each participant shall have a laptop and a calculator.

31.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

31.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

32.0 CONFORMITY STATEMENT AND DECISION RULE

32.1 Duration: Five working days

32.2 Target participants: Laboratory analysts, metrologists, scientists, laboratory technicians, chemists, laboratory technologists and other related professionals.

32.3 Course outline:

- Concept of statement of conformity and decision rule;
- Types of statements of conformity;
- Types of decision rule; and
- False Accept and False Reject.

32.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

32.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- provide statements of conformity;
- apply decision rule; and
- produce reliable results.

32.6 Course requirements: Each participant shall have a laptop and a calculator.

32.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

32.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

33.0 ROOT CAUSE ANALYSIS IN LABORATORY

33.1 Duration: Five working days

33.2 Target participants: Laboratory analysts, metrologists, scientists, researchers, laboratory technicians, laboratory technologists, quality assurance personnel, microbiologists, laboratory managers, chemists and quality control personnel

33.3 Course outline:

- Standards requirements;
- Concept of root cause analysis;
- General process for performing root cause analysis;
- Tools and methods for root cause analysis; and
- Identification and implementation of corrective actions.

33.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees and group participation.

33.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- identify root cause of the problem;
- select and apply appropriate root cause analysis tools; and
- plan and implement corrective actions.

33.6 Course requirements: Each participant shall have a laptop.

33.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

33.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

34.0 INTER-LABORATORY COMPARISON (ILC)

34.1 Duration: Five working days

34.2 Target participants: Laboratory analysts, metrologists, scientists, researchers, laboratory technicians, laboratory technologist and chemists

34.3 Course outline:

- Recap of ISO/IEC 17043 requirements;
- Means of performing inter-laboratory comparison;
- Statistical tools for inter-laboratory comparison;
- Evaluation of data; and
- Documentation.

34.4 Course presentation and methodology:

The course will be presented in Swahili or English languages. The course will be delivered in interactive tutor-led and trainee-led discussions, experience from trainees, group participation and practical sessions.

34.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- prepare protocol for inter-laboratory comparison;
- evaluate and analyze data;
- document results; and
- Improve laboratory competence.

34.6 Course requirements: Each participant shall have a laptop and a calculator.

34.7 Course assessment and awards:

A participant who attends the course, participates in group work, exercises and test and scores 60% and above of the final course evaluation shall be awarded a certificate of successful completion. Otherwise, a participant who scores less than 60% of the final course evaluation shall be awarded a certificate of attendance. In addition, participants will be provided with training materials for further reference. Full attendance of participants is required during the course.

34.8 Course fee:

The course fee is **TZS 500,000/- per person for Tanzanians and USD 500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each applicant shall be responsible for his/her own travelling and accommodation expenses.

B: LABORATORY ATTACHMENT TRAINING COURSES

35.0 MICROBIOLOGICAL ANALYSIS OF BOTTLED DRINKING WATER, NATURAL MINERAL WATER AND POTABLE WATER BY MEMBRANE FILTRATION TECHNIQUE

35.1 Duration: Ten (10) working days

35.2 Target participants: Laboratory technicians, analysts, microbiologists, scientists, laboratory technologists, researchers, industrial quality control & quality assurance personnel, laboratory managers and any other related professionals

35.3 Course outline:

- Overview of test methods;
- Sterilization and decontamination techniques;
- Sample handling and storage;
- Sample preparation;
- Preparation of culture media;
- Quality control and assurance of results;
- Sample analysis;
- Data interpretation; and
- Reporting of test results.

35.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

35.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- prepare, store and handle microbiological water samples;
- use autoclave, balance, media dispenser, micropipette and biosafety cabinets/laminar floor;
- perform quality control techniques;
- enumerate *Escherichia coli*, *Coliforms*, *Staphylococcus aureus*, *Total plate count*, *Salmonella spp*, *Sulfite reducing anaerobes*, *Shigella*, *Pseudomonas aeruginosa* and *Enterococcus* in water using membrane filtration technique; and
- report and interpret results as per relevant standard.

35.6 Course assessment:

The trainee shall analyze water sample and provide valid result; and

He/she shall be required to fully participate in the training.

35.7 Course award:

A participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

35.8 Course fee:

The course fee is **TZS 4,000,000/- per person for Tanzanians and USD 4000 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

36.0 MICROBIOLOGICAL ANALYSIS OF COSMETICS PRODUCTS BY POUR, SPREAD AND STREAK TECHNIQUES

36.1 Duration: Ten (10) working days

36.2 Target participants: Laboratory technicians, analysts, microbiologists, scientists, laboratory technologists, researchers, industrial quality control & quality assurance personnel, laboratory managers and any other related professionals

36.3 Course outline:

- Overview of test methods;
- Sterilization and decontamination techniques;
- Sample handling and storage;
- Sample preparation;
- Preparation of culture media;
- Quality control and assurance of results;
- Sample analysis;
- Data interpretation; and
- Reporting of test results.

36.4 Course methodology:

The training will be delivered in Swahili or English languages through laboratory attachment.

36.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- prepare, store and handle microbiological cosmetic samples;
- use autoclave, balance, media dispenser, micropipette and biosafety cabinets/laminar floor;

- perform quality control techniques;
- enumerate *total plate count*, *Escherichia coli*, *Candida*, *Staphylococcus aureus* and *Pseudomonas* using pour, spread and streak techniques; and
- report and interpret results as per relevant standard.

36.6 Course assessment:

The trainee shall analyze cosmetic samples and provide valid results; and

He/she shall be required to fully participate in the training.

36.7 Course award:

A participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

36.8 Course fee:

The course fee is **TZS 3,000,000/- per person for Tanzanians and USD 3000 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

37.0 MICROBIAL ENVIRONMENTAL MONITORING IN INDUSTRIES AND HOTELS BY AIR SETTLEMENT AND SWABBING

37.1 Duration: Five working days

37.2 Target participants: Laboratory technicians, analysts, microbiologists, scientists, laboratory technologists, researchers, industrial quality control & quality assurance personnel, environmentalists, pharmacists, public health officers, and quality managers from hotels and food and pharmaceutical industries

37.3 Course outline:

- Overview of test methods;
- Sterilization and decontamination techniques;
- Sampling techniques;
- Sample handling and storage;
- Sample preparation;
- Preparation of culture media;
- Quality control and assurance of results;
- Sample analysis;
- Reporting and interpretation of results; and

- Development of corrective action plan.

37.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

37.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- identify microbial contaminated areas;
- plan and develop corrective action to prevent microbial contamination;
- plan and perform sampling;
- prepare, store and handle microbiological samples;
- report and interpret results; and
- monitor and control environmental conditions.

37.6 Course assessment:

The trainee shall collect and analyze samples, interpret results and develop corrective action plan; and

He/she shall be required to fully participate in the training.

37.7 Course award:

A participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

37.8 Course fee:

The course fee is **TZS 2,500,000/- per person for Tanzanians and USD 2500 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

38.0 PHYSICOCHEMICAL ANALYSIS OF BOTTLED, MINERAL AND POTABLE WATER

38.1 Duration: Five working days

38.2 Target participants: Scientists, researchers, laboratory technicians, laboratory technologists, laboratory analysts, quality control and quality assurance personnel from water authorities/industries and any other related professionals

38.3 Course outline:

- Overview of test methods for analyzing pH, colour, odour, alkalinity, total dissolved solids, total hardness, calcium, magnesium, chloride and sulphate;
- Sample storage and preparation;

- Quality control and assurance of results;
- Sample analysis; and
- Reporting and interpretation of results.

38.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

38.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- analyze physicochemical properties in water;
- select and use quality control techniques to ensure validity of results;
- properly use and interpret quality control chart;
- prepare and standardize solutions; and
- properly use testing facilities.

38.6 Course assessment:

The trainee shall analyze water sample and provide valid results; and

He/she shall be required to fully participate in the training.

38.7 Course award:

A participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

38.8 Course fee:

The course fee is **TZS 3,000,000/- per person for Tanzanians and USD 3000 per person for foreigners, non-refundable.** The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

39.0 PHYSICOCHEMICAL ANALYSIS OF FOOD AND BEVERAGE PRODUCTS

39.1 Duration: Five working days

39.2 Target participants: Scientists, researchers, laboratory technicians, laboratory technologists, laboratory analysts, quality control and quality assurance personnel from food and beverage industries and any other related professionals

39.3 Course outline:

- Overview of test methods for analyzing pH, total soluble solids (Brix), relative density/specific gravity and acidity;
- Sample storage and preparation;

- Quality control and assurance of results;
- Sample analysis; and
- Reporting and interpretation of results.

39.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

39.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- analyze physicochemical properties in beverage and food;
- select and use quality control techniques to ensure validity of results;
- properly use and interpret quality control chart;
- prepare and standardize solutions; and
- properly use testing facilities.

39.6 Course assessment:

The trainee shall analyze samples and provide valid results; and

He/she shall be required to fully participate in the training.

39.7 Course award:

The participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

39.8 Course fee

The course fee is **TZS 2,000,000/- per person for Tanzanians and USD 2000 per person for foreigners, non-refundable.** The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

40.0 ANALYSIS OF MYCOTOXINS USING HPLC TECHNIQUES

40.1 Duration: Fifteen (15) working days

40.2 Target participants: Scientists, researchers, laboratory technicians, laboratory technologists, laboratory analysts, quality control and quality assurance personnel from manufacturing industries and any other related professionals

40.3 Course outline:

- Concept of chromatographic techniques;
- Overview of aflatoxin test methods;
- Minor troubleshooting and preventive maintenance;

- Sample preparation;
- Preparation and use of quality control samples;
- Use of HPLC in aflatoxin analysis (Agilent); and
- Reporting and interpretation of results.

40.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

40.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- quantify and interpret aflatoxin content in various samples;
- understand chromatographic techniques;
- perform daily preventive maintenance of HPLC; and
- select and use quality control techniques to ensure validity of results.

40.6 Course assessment:

The trainee shall analyze samples and provide valid results; and

He/she shall be required to fully participate in the training.

40.7 Course award:

The participant, who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

40.8 Course fee:

The course fee is **TZS 8,000,000/- per person for Tanzanians and USD 8000 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

41.0 ANALYSIS OF HYDROQUINONE IN COSMETICS PRODUCTS USING HPLC TECHNIQUES

41.1 Duration: Fifteen (15) working days

41.2 Target participants: Scientists, researchers, laboratory technicians, laboratory technologists, laboratory analysts, quality control and quality assurance personnel from pharmaceutical and cosmetics manufacturing industries and any other related professionals

41.3 Course outline:

- Concept of chromatographic techniques;
- Overview of aflatoxin test methods;

- Minor troubleshooting and preventive maintenance;
- Sample preparation;
- Preparation and use of quality control samples;
- Use of HPLC in hydroquinone analysis (Agilent); and
- Reporting and interpretation of results.

41.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

41.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- quantify and interpret hydroquinone content in cosmetics samples;
- understand chromatographic techniques;
- perform daily preventive maintenance of HPLC; and
- select and use quality control techniques to ensure validity of results.

41.6 Course assessment:

The trainee shall analyze samples and provide valid results; and

He/she shall be required to fully participate in the training.

41.7 Course award:

The participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

41.8 Course fee:

The course fee is **TZS 8,000,000/- per person for Tanzanians and USD 8000 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

42.0 ANALYSIS OF MYCOTOXINS USING ELISA TECHNIQUE

42.1 Duration: Five working days

42.2 Target participants: Scientists, researchers, laboratory technicians, laboratory technologists, laboratory analysts, quality control and quality assurance personnel from manufacturing industries and any other related professionals

42.3 Course outline:

- Principle of Enzyme-Linked Immunosorbent Assay (ELISA) technique;
- Overview of aflatoxin test method using ELISA technique;

- Minor troubleshooting and preventive maintenance;
- Sample preparation;
- Preparation and use of quality control samples;
- Use of ELISA technique in aflatoxin analysis; and
- Reporting and interpretation of results.

42.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

42.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- quantify and interpret aflatoxin content in various samples within a short time;
- understand ELISA technique;
- perform daily preventive maintenance of ELISA plate analyzer; and
- select and use quality control techniques to ensure validity of results.

42.6 Course assessment:

The trainee shall analyze samples and provide valid results; and

He/she shall be required to fully participate in the training.

42.7 Course award:

The participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

42.8 Course fee:

The course fee is **TZS 3,000,000/- per person for Tanzanians and USD 3000 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

43.0 TESTING OF NITROGEN IN FERTILIZER BY KJELDAH TECHNIQUE

43.1 Duration: Five working days

43.2 Target participants: Scientists, researchers, laboratory technicians, laboratory technologists, laboratory analysts, quality control and quality assurance personnel from Government authorities and/or industries and any other related professionals

43.3 Course outline:

- Overview of test methods for analyzing nitrogen in fertilizer;
- Sample storage and preparation;

- Preparation of standard solutions;
- Quality control and assurance of results;
- Sample analysis; and
- Reporting and interpretation of results.

43.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

43.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- use Kjeldah technique in the analysis of nitrogen;
- select and use quality control techniques to ensure validity of results;
- properly use and interpret quality control chart; and
- prepare and standardize solutions.

43.6 Course assessment:

The trainee shall analyze fertilizer samples and provide valid results; and

He/she shall be required to fully participate in the training.

43.7 Course award:

The participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

43.8 Course fee:

The course fee is **TZS 2,000,000/- per person for Tanzanians and USD 2000 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

44.0 TESTING OF PROTEIN IN FOOD BY KJELDAH TECHNIQUE

44.1 Duration: Five working days

44.2 Target participants: Scientists, researchers, laboratory technicians, laboratory technologists, laboratory analysts, quality control and quality assurance personnel from Government authorities and/or industries and any other related professionals

44.3 Course outline:

- Overview of test methods for analysing protein in food;
- Sample storage and preparation;
- Preparation of standard solutions;

- Quality control and assurance of results;
- Sample analysis; and
- Reporting and interpretation of results.

44.4 Course methodology: The training will be delivered in Swahili or English languages through laboratory attachment.

44.5 Benefits of the course:

After successful completion of this course, participants will be able to:

- use Kjeldah techniques in the analysis of protein;
- select and use quality control techniques to ensure validity of results;
- properly use and interpret quality control chart; and
- prepare and standardize solutions.

44.6 Course assessment:

The trainee shall analyze protein in food sample and provide valid results; and

He/she shall be required to fully participate in the training.

44.7 Course award:

The participant who attends the course, participates in sample analysis and produces valid results shall be awarded a certificate of successful completion.

44.8 Course fee:

The course fee is **TZS 2,000,000/- per person for Tanzanians and USD 2000 per person for foreigners, non-refundable**. The fee shall cover tuition fee, stationeries, training materials, food and refreshments. Each participant shall be responsible for his/her own travelling and accommodation expenses.

C: TAILOR MADE COURSES

In addition to the courses indicated on the list, the Bureau may, on request, arrange tailor-made courses in standardization, quality assurance, metrology and testing, specifically designed according to the client's needs.

D: CONSULTANCY SERVICES

The Bureau offers consultancy services in areas of standardization, safety and quality assurance, testing and metrology.

E: GENERAL REQUIREMENTS OF TRAINING

1.0 Mode of application:

Interested applicants are advised to apply for the course through email researchandtraining@tbs.go.tz as early as possible since the maximum number of participants required is **twenty-five (25) for public training course** and **five (5) for practical training course**. Apply course by provide the following information:

- Full name of applicant;
- Region and district of applicant;
- Contact (physical address/P. O. Box) of applicant;
- Phone number and email address of applicant;
- Organization name, contact (physical address/P. O. Box), region and district (if any); and
- For enquiries contact us through cell phone Nos. +255 737 700447, +255 733 700447.

2.0 Mode of payment

Course fee shall be paid in full and once **fourteen (14) days** prior to the date of training. Government bill will be issued to applicant.

3.0 Postponement and cancellation of training

If a participant fail to attend the training for any reason, the paid course fee will not be refunded. In case the Bureau postpones the training, the applicant will be informed **ten (10) days** before commencement of the training course together with re-scheduled date.

4.0 Training venue

The training will be conducted at Test House 5th Floor Wing A at TBS Headquarters, Ubungu Area, Morogoro Road/Sam Nujoma Road, Dar es Salaam.