**Objective/Outcome**

Participants acquire knowledge and skills on culture, DST, and new diagnostic techniques through hands-on training, and develop their laboratory management skills for laboratory managers in order to strengthen rapid diagnosis.

**Outcome**

1. To be able to explain TB control, bacteriology of TB, UHC and End TB
2. To understand laboratory management, laboratory network, Quality Assurance and train technicians about laboratory works
3. To be able to practice TB culture and identification test
4. To be able to deal with examination of TB-HIV, MDR-TB and other AMR (antimicrobial resistant)

**Contents**

1. Global TB problem, Role of laboratory in TB control programme, TB epidemiology, TB immunology, Anti-tuberculosis drug, Smear examination (ZN: direct and concentration, Fluorescence), Microscope and its maintenance, UHC and End TB, Disease control and UHC, Emerging and Re-emerging diseases,
2. Training method for TB microscopy, Problem analysis, Logical frame work (Project Design Matrix), Logistics, Reporting and recording, Biosafety, Smear assessment, Strain preservation and transport, QA for culture and DST, QA and ISO 15189, Laboratory Quality Management System, Micro teaching,
3. Solid culture, Liquid culture, Identification tests, Culture results observation, Pyrazinamidase test, Troubleshooting for culture, analysis for culture, PNB test,
4. TB-HIV, Solid DST, Liquid DST, EQA for DST, DST for 2nd line drugs, LAMP, Line probe assay, GeneXpert, GeneXpert algorithm and PMDT, TB/HIV, Molecular biology, PCR,

*This program incorporates “Active Learning” for Knowledge Co-creation (KCCP).*

**Target Organization / Group**

- **Target Organization**
  - National Tuberculosis Reference Laboratory or Provincial / Regional Tuberculosis Reference Laboratory

- **Target Group**
  1. be a senior technician or a medical doctor who is responsible for the management of laboratory works in TB control program in the region/country,
  2. have experience in TB laboratory at least 3 years, and be determined to continue the duties on management of above mentioned work more than 3 years after returning the country,
  3. not have attended similar training course on TB laboratory management.

**Outline**

The End TB Strategy and SDGs aim to end TB epidemic, which requires to provide TB care and prevention in the context of UHC and address drug-resistance TB and AMR (anti-microbial resistance) through multi-sectorial approach. This training course allows participants to learn knowledge and skills for TB laboratory management and TB examination so that they can contribute to their national TB control programs.