



CRCL-ITEC PROGRAMME (DECEMBER, 2026)

07th December to 18th December, 2026 (02-Week)

Introductory Course for Enforcement Agencies / Lab Chemists on Identification, Testing and Analysis of Illicit Drugs (Narcotic Drugs, Psychotropic Substances and Precursor Chemicals)

(As per UN Drug Control Conventions, UNODC Recommendations, and International Forensic Best Practices)

1. Background

Illicit drugs or Narcotic drugs, psychotropic substances, and precursor chemicals are subject to stringent national and international control due to their potential for abuse, diversion, and transnational trafficking. Effective enforcement of drug control laws depends upon scientifically sound identification, safe handling, and legally robust forensic examination of seized substances.

Law-enforcements, Customs and forensic laboratories play a pivotal role in supporting interdiction, investigation, prosecution, and judicial processes. This training course is designed to provide participants with a structured understanding of the **legal, operational, and analytical framework** governing Illicit or narcotic drugs, psychotropic substances, and precursor chemicals, with emphasis on **laboratory and field-level identification** in line with UN conventions and international best practices.

2. Objectives

The course aims to:

- Provide foundational knowledge of narcotic drugs, psychotropic substances, and precursor chemicals
 - Explain international and national drug control frameworks under UN conventions
 - Build capacity in sampling, chain of custody, and safe handling of NDPS
 - Introduce field and laboratory identification techniques used in forensic drug analysis
 - Strengthen coordination between enforcement agencies and forensic laboratories
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3. Target Participants

Forensic personnel, Customs officers, narcotics control officers, law-enforcement officials, laboratory analysts, and officers involved in seizure, investigation, sampling, and prosecution of NDPS cases.

4. Duration

Two (02) Weeks – Ten (10) Working Days

(Theory with extensive practical demonstrations, hands-on laboratory sessions, and study visits)

5. Course Structure

• Module I – Introduction and Institutional Orientation

Day 1

- Inaugural Session and Course Orientation
 - Overview of Central Revenues Control Laboratory (CRCL): mandate, functions
 - Laboratory Tour: analytical facilities, sample handling areas
 - Introduction to course objectives and methodology
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Module II – Drug Classification and Legal Framework

Day 2

- Introduction to Illicit Drugs: Narcotic Drugs, Psychotropic Substances, Precursor Chemicals
 - Drug Classification: Natural, Semi-Synthetic, Synthetic
 - Overview of Drug Scheduling Systems
 - UN Drug Control Conventions (1961, 1971, 1988)
 - Role of UNODC, INCB, and National Implementation
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Module III – Drug Trafficking and Enforcement

Day 3

- Modus Operandi of Drug Traffickers
 - Concealment Methods and Smuggling Routes
 - Emerging Trends: Synthetic Drugs, New Psychoactive Substances (NPS)
 - Role of Customs and Law Enforcement Agencies
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Module IV – Field Testing and Detection Kits

Day 4

- Presumptive Testing of Drugs and Precursor Chemicals
 - Overview and Demonstration of Drug Detection Kits
 - Chemistry Behind Detection Kits
 - Interpretation of Results
 - Causes of False Positives and False Negatives
 - Limitations of Field Testing
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Module V – Sample Handling, Chain of Custody, Safety, and Ethics

Day 5

- Safety Precautions while Handling Illicit Drugs
 - Sample Packaging, Sealing, Storage, and Forwarding
 - Importance and Maintenance of Chain of Custody
 - Ethical Principles: Impartiality, Confidentiality, Professional Conduct
 - Best Practices in Handling Illicit Drug Evidence
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Module VI – Preliminary Laboratory Analysis

Day 6

- Physical, Macroscopic, and Microscopic Examination of Drugs
- Colour Tests and Spot Tests
- Thin Layer Chromatography (TLC) – Theory and Practical Demonstration
- Role of Blank Samples, Control Samples, and Reference Standards



Module VII – Advanced Instrumental Techniques I

Day 7

- Gas Chromatography (GC) and GC-MS Analysis
 - Sample Preparation Techniques
 - Interpretation of Chromatograms and Spectra
 - Confirmatory Analysis of Narcotic Drugs and Psychotropic Substances
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Module VIII – Advanced Instrumental Techniques II

Day 8

- High Performance Liquid Chromatography (HPLC) and LC-MS Applications
 - FTIR and UV-Visible Spectroscopy
 - Method Validation and Quality Control
 - Analytical Uncertainty and Reporting
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Module IX – Courtroom Simulation and Legal Interface

Day 9

- Role of Forensic Laboratories in Judicial Processes
 - Preparation and Presentation of Expert Reports
 - **Mock Trial/ Courtroom Simulation:**
 - Examination-in-Chief of Forensic Expert
 - Cross-Examination by Defence
 - Challenges on Chain of Custody and Sample Integrity
 - Judicial Appreciation of Laboratory Evidence
 - Dos and Don'ts for Courtroom Testimony
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Module X – Best Practices, Quality Assurance and Course Conclusion

Day 10

- International Best Practices in Forensic Laboratories
- Laboratory Accreditation and Quality Assurance



- Case Studies and Lessons Learned
 - Participant Presentations and Feedback
 - Valedictory Session and Certificate Distribution
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7. Expected Learning Outcomes

Participants will be able to:

- Understand international drug control frameworks under UN Conventions
 - Identify and classify illicit drugs and precursor chemicals
 - Apply correct procedures for sampling, chain of custody and safety
 - Use presumptive tests and understand their limitations
 - Appreciate the role of advanced instrumental techniques in drug identification
 - Apply ethical, impartial and confidential laboratory practices
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Working Hours and Break Schedule

- Working Hours: 09:30 hrs to 18:00 hrs
 - Morning Tea Break: 11:00 hrs – 11:15 hrs
 - Lunch Break: 13:00 hrs – 14:00 hrs
 - Afternoon Tea Break: 16:00 hrs – 16:15 hrs
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