Forensic Toxicology-Drugs and Poisons in Criminal Cases Training Course

Professional Development Training Course Outline

Category	Criminology	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Forensic Toxicology plays a pivotal role in modern criminal investigations by identifying and analyzing toxic substances such as drugs, poisons, and alcohol in biological specimens. Training Course on Forensic Toxicology-Drugs & Poisons in Criminal Cases provides in-depth knowledge on the scientific and legal aspects of toxicology within the criminal justice system. With rising global concerns over drug-related crimes, poisonings, and forensic errors, the demand for professionals proficient in forensic toxicology has never been more critical. The course emphasizes evidence-based practices, laboratory techniques, and real-world applications in drug overdose investigations, homicide by poisoning, and impaired driving cases.

Participants will explore the integration of toxicological principles with criminal casework, focusing on the detection, interpretation, and legal implications of substances found in victims or suspects. Using trending forensic technology, such as liquid chromatography-mass spectrometry (LC-MS) and hair drug analysis, learners will gain hands-on insights into toxicological screening and confirmation procedures. This course is essential for forensic professionals, criminal investigators, healthcare workers, and legal experts seeking to strengthen their case resolution capabilities through scientific toxicology.

Programme Curriculum

Forensic Toxicology-Drugs and Poisons in Criminal Cases Training Course

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Course Objectives

1. Understand core principles of forensic toxicology and its application in criminal justice.
2. Analyze the pharmacokinetics and pharmacodynamics of common toxic substances.
3. Identify methodologies used for detecting poisons and drugs in biological matrices.
4. Differentiate between acute and chronic poisoning cases.
5. Interpret toxicology reports and lab findings in legal contexts.
6. Examine the impact of drug-facilitated crimes (DFCs) and strategies for detection.
7. Explore postmortem toxicology practices and challenges.
8. Learn specimen collection, preservation, and chain of custody protocols.
9. Investigate designer drugs, synthetic opioids, and their forensic implications.
10. Assess limitations and reliability of toxicological tests in court proceedings.
11. Recognize toxicological patterns in homicidal poisonings.
12. Apply forensic toxicology knowledge to real-life case investigations.
13. Develop competency in communicating toxicological findings to legal audiences.

Target Audiences

1. Forensic scientists
2. Crime scene investigators
3. Law enforcement professionals
4. Criminal justice students
5. Medical examiners and pathologists
6. Toxicologists and lab technicians
7. Legal professionals and prosecutors
8. Public health and emergency response teams

Course Duration: 5 days

Course Modules

Module 1: Fundamentals of Forensic Toxicology

- Overview of forensic toxicology and its significance
- History and evolution of toxicology in legal systems
- Role of toxicologists in criminal investigations
- Classification of toxins and poisons
- Introduction to biological matrices used in testing
- **Case Study:** Accidental vs. intentional poisoning in a domestic homicide case

Module 2: Analytical Techniques in Drug and Poison Detection

- Screening and confirmation methods (GC-MS, LC-MS, immunoassays)
- Instrument calibration and quality assurance
- Challenges in detecting low-concentration substances

- Sample preparation and preservation techniques
- Emerging technologies in forensic toxicology
- **Case Study:** LC-MS application in identifying fentanyl in a toxicology report

Module 3: Pharmacokinetics and Pharmacodynamics

- Absorption, distribution, metabolism, and excretion of toxins
- Factors influencing toxicological outcomes (age, health, genetics)
- Dose-response relationships in forensic interpretation
- Drug interactions and synergistic effects
- Biological variability and its legal implications
- **Case Study:** Multidrug interaction resulting in overdose and wrongful death litigation

Module 4: Toxicology in Postmortem Investigations

- Importance of autopsy in toxicological evaluations
- Specimen selection and challenges in decomposition
- Vitreous humor and liver tissue testing
- Differentiating antemortem from postmortem ingestion
- Correlating toxicology results with cause of death
- **Case Study:** Analysis of poisoning in a high-profile celebrity death

Module 5: Drug-Facilitated Crimes (DFCs)

- Identification of common DFC substances (GHB, ketamine, benzodiazepines)
- Timeline and windows of detection
- Challenges in victim reporting and delayed testing
- Legal implications in sexual assault and robbery cases
- Prevention strategies and public awareness
- **Case Study:** Toxicological evidence in a drug-facilitated sexual assault case

Module 6: Homicidal Poisoning and Criminal Intent

- Types of poisons used in homicides (arsenic, cyanide, digitalis)
- Forensic profiling of poisoning suspects
- Deliberate contamination cases (food, medication)
- Historical and modern cases of homicidal poisoning
- Psychological and behavioral analysis in poisoners
- **Case Study:** Investigation and conviction in a serial poisoning case

Module 7: Interpretation and Legal Presentation of Toxicology Reports

- Reading and interpreting toxicology lab results
- Expert witness testimony and courtroom procedures
- Limitations and admissibility of toxicology evidence
- Differentiating between therapeutic, toxic, and lethal levels
- Ethics and responsibilities of forensic toxicologists
- **Case Study:** Discrepancies in toxicology reporting leading to wrongful conviction

Module 8: Emerging Trends and Future Directions in Forensic Toxicology

- Designer drugs and the challenge of detection
- Nanotoxicology and bioaccumulation studies
- Mobile toxicology labs and rapid on-site testing
- Artificial intelligence in data analysis and pattern recognition
- Interdisciplinary collaboration in toxicological investigations

- **Case Study:** AI-assisted toxicology in identifying unknown compound in a poisoning case

Training Methodology

- Interactive lectures with forensic case simulations
- Laboratory demonstrations and hands-on sample analysis
- Group discussions and expert panels
- Real-world case study deconstructions
- Legal workshops on court report writing and testimony
- Assessments through quizzes, lab logs, and mock trials

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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