

Forensic DNA Fundamentals

Tuition: \$600.00 | 90-Day Access | Preregister at: www.ForensicTraining.online



Course Description:

Forensic DNA Fundamentals provides a comprehensive introduction to the scientific principles, laboratory processes, casework considerations, and emerging technologies that form the foundation of modern forensic DNA analysis.

Designed for forensic professionals, law enforcement personnel, attorneys, investigators, laboratory staff, students, and others who work with or encounter DNA evidence, this course takes participants through the forensic DNA process—from the history and biological foundations of DNA analysis to evidence collection, laboratory casework, statistical interpretation, DNA databases, and advanced investigative applications.

Participants will develop a practical understanding of how biological evidence moves from the crime scene through the forensic laboratory.

Who Should Take This Course?

This course is ideal for **forensic scientists, DNA laboratory personnel, crime scene investigators, evidence technicians, law enforcement investigators, attorneys, prosecutors, defense professionals, forensic consultants, students, and other criminal justice professionals** seeking a practical foundation in forensic DNA evidence.

Whether you work directly with biological evidence or need to understand DNA findings as part of an investigation, case review, or courtroom proceeding, **Forensic DNA Fundamentals** provides the foundational knowledge necessary to better understand one of the most powerful tools in modern forensic science.

Course Modules:

History of Forensic DNA

Explore the development of forensic DNA analysis, major scientific milestones, and the evolution of DNA technology from early forensic applications to today's advanced analytical and investigative techniques.

Evidence Collection

Examine proper procedures for recognizing, collecting, packaging, preserving, and handling biological evidence. Participants will also explore personal protective equipment, contamination prevention, evidence integrity, and appropriate handling practices.

DNA 101

Learn the basic biology and genetics behind forensic DNA analysis, including DNA structure, chromosomes, inheritance, genetic variation, and the characteristics that make DNA valuable for human identification.

Casework 101

Follow the progression of forensic DNA evidence through the laboratory and gain an understanding of the fundamental processes involved in forensic DNA casework.

Casework Strategy

Explore how case information, evidence types, testing priorities, sample selection, and investigative questions influence the development of an effective DNA testing strategy.

Data Analysis

Gain an introduction to the evaluation of forensic DNA data and the principles used to determine whether analytical results are suitable for interpretation and comparison.

Statistics

Understand why statistics are essential to forensic DNA interpretation and explore the fundamental concepts used to communicate the significance and weight of DNA evidence.

Probabilistic Genotyping

Receive an introduction to probabilistic genotyping and learn how computational approaches can assist with the interpretation of complex DNA profiles and mixtures.

Quality Systems in Forensics

Explore the role of quality assurance and quality management in forensic DNA laboratories, including procedures, documentation, validation, competency, proficiency testing, technical review, and other safeguards designed to support reliable forensic results.

Understanding DNA Reports and Case Files

Learn how to navigate forensic DNA laboratory reports and supporting case documentation. Participants will develop a better understanding of terminology, conclusions, analytical information, limitations, and other information that may be important when reviewing DNA findings.

Cold Case Review

Examine strategies for reviewing older or unresolved cases to identify biological evidence that may benefit from contemporary DNA testing, database searching, or newer forensic technologies.

Forensic Investigative Genetic Genealogy (FIGG)

Explore the fundamentals of Forensic Investigative Genetic Genealogy, including its role as an investigative lead-generation tool, how it differs from traditional forensic DNA testing, and important considerations surrounding its use.

Kinship

Learn the basic principles of biological relationship testing and how genetic information may be evaluated when investigating potential familial relationships.

Databases – CODIS & FIGG

Compare traditional forensic DNA database searching through CODIS with databases and investigative approaches associated with FIGG. Participants will explore their different purposes, applications, capabilities, and roles in criminal investigations.

Learning Outcomes:

Upon completion of **Forensic DNA Fundamentals**, participants should have a stronger working knowledge of the complete forensic DNA process and be better prepared to:

- Explain fundamental DNA biology and forensic DNA terminology.
- Recognize important considerations when collecting and preserving biological evidence.
- Describe the general progression of evidence through forensic DNA casework.
- Understand how casework strategies influence DNA testing decisions.
- Recognize fundamental concepts involved in DNA data analysis and interpretation.
- Explain the role of statistics and probabilistic genotyping in evaluating DNA evidence.
- Understand the importance of forensic laboratory quality systems.
- More effectively review and understand forensic DNA reports and case files.
- Identify considerations associated with reviewing cold cases for additional DNA testing.
- Explain the fundamental concepts and investigative applications of FIGG.
- Understand basic kinship analysis concepts.
- Differentiate between CODIS searching and FIGG-related database applications.