

**Department of Anthropology**  
**University of Delhi**  
**Syllabus 2023-24**  
**Certificate Course in Forensic Science (C.C.F.S)**

**Paper I: Anthropology of Crime & Criminology (4 Credits)**

**Unit 1: Anthropology of Crime**

- I. Crime and Custom in Traditional Societies
- II. Nature of Reward and punishment
- III. Customary Law: Mode of Dispute Resolution
- IV. Anthropological Theories of Crime and Delinquency
- V. Ethnographies of crime :Cross-cultural perspective

**Unit 2: Criminology**

- I. Criminology: Nature and Scope of criminology
- II. Concept, Theories and Perspectives
- III. Criminal Behavior and Psychology
- IV. Criminal Profiling

**Unit 3: Criminal Law:**

- I. Relevant Provisions of BNS (Bharatiya Nyaya Sanhita or BNS 2023; Bharatiya Nagarik Suraksha Sanhita or BNSS 2023; Bharatiya Sakshya Bill, BSB 2023.
- II. Role of Police in crime Investigation and Allied Scientific aids.
- III. Maintenance of crime records; Fingerprint Bureau and Modus Operandi Bureau, Digitization of Crime records
- IV. Presentation of scientific evidence in courts and its legal acceptance.

**Unit 4: Crime Scene investigation and Analysis**

- I. Documentation of crime scene (sketching, note-taking, photography and videography)
- II. Types of crime scene, responsibility of first responder, securing & protection of crime scene,
- III. Collection, preservation, packaging and transportation of various evidences
- IV. Chain of custody, reconstruction, report writing & expert testimony

**Practical: Paper I: Anthropology of Crime and Criminology (2 Credits)**

- i. Study of organizational structure of investigation agencies
- ii. Investigation & reconstruction of crime scene
- iii. Method of Collection and Packaging of Crime evidences on Spot
- iv. Moot Court: Presentation of Evidence in court

**Paper II: Fundamentals of Forensic Science****(4 Credits)****Unit 1: Introduction**

- I. History, Scope and relevance of Forensic Science
- II. Forensic Science Laboratory in India
- III. Scientific Discourse in Forensic Science

**Unit 2: Forensic Chemistry & Toxicology**

- I. Methods of chemical analysis for alcohol, food adulterants, explosives, and inflammable solvents.
- II. Types of Poisons and their origin, Effect on Physiology and its analytical examination
- III. Types of Substance abuse and their analytical examination.

**Unit 3: Forensic Biology, Serology and DNA Profiling**

- I. Composition and identification of blood and determination of species of origin and human blood types.
- II. Detection and study of different biological evidence
- III. Forensic significance of hair, pollens, and diatoms.
- IV. Analysis and interpretation of DNA profiling.

**Unit 4: Forensic Anthropology and Personal Identification**

- I. Personal identification through Somatometry, Somatoscopy, occupational marks, tattoo marks and cultural symbols
- II. Forensic Morphometry of Skeletal Remains, Bone Pathology and Forensic Odontology
- III. Folkways and Habitus as Identity markers

**Practical Paper II: Fundamentals of Forensic Science****(2 Credits)**

- i. Identification and analysis of chemical evidences (poisons/alcohol/explosives/residues/narcotics/ drugs) by chemical tests.
- ii. Identification of common adulterants in petrol, diesel, kerosene, and foods (Spices, fats and oils) using colour test and analytical methods.
- iii. Preliminary and confirmatory tests for detection of blood, semen, saliva, urine and vomit. Blood grouping from dried and fresh blood stain.
- iv. Macro & Microscopic examination of human and non-human hair.
- v. Microscopic examination of diatoms & pollens.
- vi. Interpretation of DNA STR Electropherogram
- vii. Morpho-metrical analysis of long bones and skull and calculation of indices.
- viii. Sex determination from skull and pelvis and age estimation from skull. Stature estimation from long bones.
- ix. Somatometric and Somatoscopic methods in personal identification.

## Paper III: Advances in Forensic Science

(4 Credits)

### Unit 1: Forensic Ballistics & Explosives

- I. Firearms: classification and characteristics, components of ammunition and firearms, methods and types of rifling, country-made/imitative firearms
- II. Introduction to internal, external, and terminal ballistics.
- III. Forensic examination of bullet and cartridge cases and GSR, estimation of range of firing.
- IV. Classification, types and composition of explosives, mechanism and effect of explosion

### Unit 2: Questioned documents

- I. Methods of examination of questioned documents (documents, handwriting and signature)
- II. Characteristics of handwriting and its examination (Detection of forgery, examination of anonymous and disguised writing, detection of alteration)
- III. Examination of secret writing and charred document, estimation of age of documents
- IV. Methods & detection techniques of counterfeit currency, passports, cheques and stamp paper

### Unit 3: Forensic Dermatology and other impressions

- I. Morphogenesis of friction ridges, pattern types, classification of fingerprints
- II. Tracing, lifting collection and preservation of fingerprints
- III. Types of powder and chemical methods for development of latent fingerprints: Photography for comparison.
- IV. Significance of Poroscopy and Edgeoscopy
- V. Relevance of lip prints, palm prints and ear prints.

### Unit 4: Digital Forensic & Cyber Crime

- I. Definition and types of cyber crimes, cyberattack, cybersecurity and types of malware, investigations tools and techniques.
- II. Hardware & software of computer, types of storage media, pre-search preparation and action at the crime scene, Digital evidences
- III. Relevance and examination of Audio-video evidences
- IV. Approaches for speaker identification

### Practical: Paper III: Advances in Forensic Science

(2 Credits)

- i. Determination of material properties (glass, fibre, paint, and soil)
- ii. Physical matching of glass, direction and sequence of impact in glass fracture.
- iii. Examination of soil using microscopic, chemical and density gradient methods.
- iv. Microscopic examination of fibre, paint and tool marks impression.
- v. Identification of different components of various firearms. Comparison of test and fired cartridge cases and bullets.
- vi. Filing of fingerprint on FBI card, pattern identification and classification system of fingerprint. Identification of ridge characteristics and comparison of questioned and suspected fingerprints.

- vii. Development of latent fingerprints by different powder and chemical methods and its comparisons by individual and class characteristics.
- viii. Examination of anonymous letters, disguised writing, decipher alterations, secret writing and indentations marks in documents.
- ix. Comparison of hand writing samples with exemplars on the basis of class and individual's characteristics.
- x. To examine the Forgery in currency notes, Passports and cheques.
- xi. Identification of parts of computer including hardware and software. Recovery of data, copying and imaging, verifying integrity of file using hash calculator.
- xii. Audio, Video and image authentication and Speaker identification using various software.