

# **Forensic Law Certificate Course**

(Free Reading Material)

## **Introduction to Forensic Science**

Forensic science is the applicability of science and technology to help in conducting criminal investigations that help in gathering authentic evidence to solve cases. It is an integral part of the criminal justice system. Each crime scene is unique and poses varied challenges. During investigation, evidence is collected from the crime scene, which is then analysed scientifically in forensic laboratories to present the facts of the case in form of a report in the courtroom. Forensic experts have a vital role to play as the report provided by him is reliable and accurate. Various kinds of evidence are gathered to evaluate scientifically. For example, fingerprints, Handwriting comparisons and analyses, hair samples or any other DNA samples such as blood stains. Some of the categories of Forensic Sciences include, the studies of the following:

- Ballistics (Everything related to firearms)
- Toxicology (Drugs related)
- Serology (Bodily Fluids)
- DNA coding

- Handwriting and signature analysis
- Fingerprints examination

Forensic investigation is the method of analysing the physical evidence present at a crime scene, with the objective to gather more details about the crime.

Types of Forensic Investigation:

- ✓ **Forensic Dentistry** – When a culprit bites a victim he can be identified on the bases of marks left as teeth have distinct patterns.
- ✓ **Forensic Pathology** – Main purpose of Forensic Pathology is to find the cause of death. For example, by conducting an autopsy.
- ✓ **Forensic Psychology** – the motive and intent of the perpetrator can be studied through psychological testing and analyses.
- ✓ **Forensic Toxicology** - Using urine, blood or hair samples, toxicology is the study of drugs or any other chemical present in the body or in its environment.
- ✓ **Forensic Graphology** – Writer's state of mind can also be determined by looking at suicide notes, blackmailing notes or any other written material. Mood, integrity, emotional stability and motivation can be determined from the handwriting.
- ✓ **Forensic Entomology** - The study of any type of insects found at crime scenes also helps to reveal a lot about the crime scene.

- ✓ **Forensic Archaeology** – It is the study of determining the age of decomposing human body, with the help of the scientific technology of carbon dating.
- ✓ **Forensic Auditing** – They investigate by seeing the financial assets of companies, fraud investors, tax evasion and other monetary frauds committed.
- ✓ **Cyber Forensic** – It recovers data from cell phones, hard drives, emails and other computer devices to be used as evidence.

### **Role of Science in the Criminal Justice System**

The purpose of investigation is for the Police and other investigating authorities to collect evidence. Physical evidence is collected from the crime scene and sent to laboratories for their analyses; sometimes samples are needed from the accused person to match the sample with the physical evidence obtained from the crime scene. There is a vital role of science in the criminal justice system to collect evidence and evaluate them scientifically. Moreover, science is also used to rehabilitate the criminals by studying their psychological conditions. The objective of the criminal justice system is not just to punish the criminals; it has an objective to also reform them.

### **Historic Evolution of Forensic Science**

Application of science and technology to detect and investigate crime is as old as the criminal justice system itself. Although our ancestors have not recognised the existence of forensic science, Kautilya's Arthashastra which is 2300 years old, studies had been made with respect to various papillary ridges. They also recognised individuality of fingerprints which they used as signatures. According to Mr. KM Kata, China also used fingerprints in ancient kingdoms.

In the 19th century, poisoning became the most common mode of killing. To gather scientific evidence under the department of health, the first chemical examiner's laboratory was established at Madras Presidency in 1849. Followed by it many other laboratories were established in different parts of India; Calcutta in 1853, Agra in 1864, Bombay in 1870 and Lahore (Now Pakistan) to provide the criminal justice system a strong backbone.

The Criminal Investigation Department maintained a record of complete sketch and photograph of the criminals to easily identify the habitual offenders. In 1879, Alphonse Bertillon introduced "Anthropometry" for criminal's body measurements to identify them easily. Thus, in 1892, the 'Bureau of Anthropometric Measurements' was established in Calcutta. The first fingerprint Bureau was established in Calcutta in 1897 by Sir Edward Henry, I.G.P., Bengal by Bertillon system. With this establishment, India

became the first country in the world to do identification on the basis of fingerprints. The department of explosives was established at Nagpur in 1898.

The British Government of Bengal appointed Mr. CR Hardless as Government handwriting expert of Bengal in 1904. The whole setup was shifted to Shimla in 1906 and control was given to the Director of CID, Mr. CR Hardless. Later on, Mr. S.N. Sen became the first Indian to overtake this post in 1949. During World War II, this association was given the work of secret censorship and to read invisible secret writing of the military in the war. In the past few years, Government Examinations of Questioned Documents of Kolkata, Shimla and Hyderabad have been merged with Central Forensic Science Laboratory of Kolkata, Chandigarh and Hyderabad respectively.

Central Forensic Science Advisory Committee was constituted to establish new Forensic Science Laboratories:

1. Central Forensic Science Laboratories under Ministry of Home Affairs, at Calcutta (1957)
2. Central Advisory Committee on Forensic Science under the Ministry of Home Affairs, at New Delhi (1959)
3. Central Medico-Legal Advisory Committee under the Ministry of Home Affairs, at New Delhi (1955)

Taking into consideration the growing need for Forensic Science Laboratories, many states have started with Regional Forensic Science Laboratories. Tamil Nadu has nine Regional Forensic Science Laboratories. Efforts are made to decentralize Forensic Science Laboratories to provide effective and speedy investigation assistance.

Mobile Forensic Science laboratories were established to assist Investigation officers in collecting and analysing evidence. Tamil Nadu has 36 i.e., highest number of Mobile Forensic Science laboratories, followed by Karnataka with 20 and Andhra Pradesh with 24. First independent forensic science laboratory in India was established at Hyderabad in October 2007 by Dr. K.P.C. Gandhi.

### **Importance of Forensic Science for a legal career**

Based upon Locard's principle of exchange, the examination of physical evidence found on the crime scene, when studied scientifically can reveal who was involved, and who was not involved in crime. To satisfy the legal requirement for proving the crime can be fulfilled by laboratory identification of materials, such as semen in sexual assault, volatile liquid in arson, autopsies at homicide scenes to determine the cause of death or drug possession. Thus, it is very important for a person involved in the legal field to know forensic science. Permissibility, relevancy and admissibility of evidence during

investigation can be seen from the provisions of Constitution of India, 1950, Criminal Procedure Code, 1973, Indian Evidence Act, 1872 and The Identification of Prisoners Act, 1920.

Section 311A of CrPC gives power to the Magistrate to order accused to give specimen signatures or handwriting to aid investigation. Section 53 of CrPC empowers examination of accused by medical practitioner at the request of police officer. Section 53A of CrPC a person accused of rape can be examined by a medical practitioner. Under this section examination will include DNA profiling, blood, semen, swabs, sweat, hair, nail clippings or any other tests by modern scientific technology. In *State of Bombay vs. Kathi Kalu Oghad*<sup>1</sup>, the question was raised regarding the admissibility of specimen writings in view of Article 20(3) of the Constitution of India. The Apex Court took into consideration the need to use forensic tests or techniques for paving the way for investigation. In *Selvi and others v. State of Karnataka*<sup>2</sup>, the court distinguished between the physical evidence and testimonial acts and held that only physical evidence is admissible under law. Testimonial acts such as polygraph, Brain mapping or Narcoanalytic are only permissible if the person voluntarily expresses consent to undergo them.

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<sup>1</sup> 1962 SCR (3) 10

<sup>2</sup> (2010) 7 SCC 263

Section 5 of the Identification of Prisoners Acts, 1920 permits photography of accused persons for the purpose of investigation. However, its scope has been limited by *Ritesh Sinha v. State of UP*<sup>3</sup> raising the question of whether voice samples are included within its scope or not.

### **Necessity of Forensic Science in Criminal Investigation**

There is an urgent need to use scientific technology for criminal investigation as the number of crimes and criminals continue to rise day by day. Criminalistics is a discipline of forensic science, which uses the techniques of natural science to identify, individualize and evaluate physical evidence. This is not limited to criminal cases; it can also be used in civil cases such as forgery or misrepresentation. Forensic science has wide scope in this course and restricts its scope to questioned documents examination which includes interpretation and comparisons of handwritings, photocopied material, signatures, mechanically produced materials, such as typed or printed materials. It also includes analysing papers, inks and other materials used to produce documents.

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<sup>3</sup> (2019) 8 SCC 1

## What all careers are available in Forensic Science?

Forensic science is still one of the most unexplored paths in India, due to which we lack in efficient criminal investigation. Forensic Science is an interesting and challenging career. Some of the avenues available to a forensic science enthusiast are as follows:

- Forensic DNA Analyst
- Crime Scene Investigator
- Forensic Ballistics Expert
- Bloodstain Pattern Analyst
- Forensic Toxicologist
- Forensic Documents Examiner
- Digital Forensic Expert
- Forensic Accountant
- Forensic Anthropologist
- Forensic Psychologist
- Forensic Pathologist
- Forensic Odonatologist
- Polygraph Examiner

## Questioned documents and related legal aspects

### What are Documents?

Documents are records of any event, maintained in writing, to ensure that information cannot be modified in future or is not lost. The term “Document” has a wide scope, covering writing with any material such as pencil, pen or chalk on any material such as paper, cardboard, wall or slab. In recent years, electronic records are also considered to be documents and they are permissible in court of law. For example, Sales invoice, wills and deeds, newspaper or any other document.

### Legal Definition of Document

The legal definition of document can be referred from various legislations, some of which are as follows:

- According to **Section 3 of Indian Evidence Act of 1872**, a “*document means any matter expressed or described upon any substance by means of letters, figure or marks or by more than one of those means, intended to be used or which may be used for purpose or recording that matter.*”

Illustrations:

- Inscription on stone is document;

- Map is a document;
- Caricature in document;
- Egyptian Pictographs stock can also be treated as documents;
- Cuneiform Scripts are also considered as writing.

- According to **Section 29 of Indian Penal Code of 1860**, the word “Document” denotes any matter expressed or described upon any substance by means of letters, figures or marks, or by more than one of those means, instead to be used, or which may be used, as evidence of that matter. It is immaterial to see upon what substance the letters, figures or marks are formed or by what means they are created.

Examples of document:

- Map or plan up is document;
- Cheque upon a banker is a document;
- Power of attorney is a document;
- Instructions or a direction given is also document.

- According to **Section 3 (18) of General Clause Act of 1897**, the word “Document” includes any kind of written material, expressed or described

upon any substance by way of letters, figures or marks by any means for the purpose of recording the matter.

### **What is forgery?**

Forgery refers to the act of fabricating or making a false written document. Copying, imitating or altering the genuineness of the document, including signatures contained therein, banknotes or any other document, comprises an element of intention to defraud. The origin of Forgery lies in the inborn tendency of human beings to imitate; its detection can be done by a trait known as inherent quality of imperfection attending all human acts and performance. Forging money or currency is called counterfeiting. However, during this course we will have our focus on signature and handwriting forgery. Signature forgery is the mostly common form of forgery.

### **Legal definition of forgery**

**Section 463 of Indian Penal Code, 1860** defines “**Forgery**” as “Whoever makes any false document or false electronic record or part of a document or electronic record, with intent to cause damage or injury, to the public or to any person, or to support any claim or title, or to cause any person to part with property, or to enter

into any express or implied contract, or with intent to commit fraud or that fraud may be committed, commits forgery.”

**Section 470 of Indian Penal Code of 1860**, defines forged documents or electronic record as any document wholly or partly forged.

**Section 464 of Indian Penal Code, 1860 defines “Making of false document”**

as a person who makes a false document or false electronic record –

Who dishonestly or fraudulently,

- Makes signature, seal or executes document or any part of the document
- Transmits any electronic record or any part of the record
- Affixes electronic signature
- Makes any mark denoting execution

Who without lawful authority, dishonestly or fraudulently, alters document or electronic record, Who dishonestly or fraudulently, cause any person to sign, seal or execute or alter, knowing that such person by reason of unsoundness or intoxication in unable to know the nature of the contents.

For example, A without Z’s authority affixes Z’s seal on the document. A has committed forgery.

## Punishment for forgery

Forgery is a white-collar crime punishable under Indian Penal Code. Following are the provisions under which forgery can be punished:

- **Section 465 of Indian Penal Code of 1860**, provides punishment for forgery, any person who commits forgery shall be imprisoned for up to two years or with fine or with both.
- **Section 468 of Indian Penal Code of 1860**: Forgery for purpose of cheating, shall be punished with imprisoned for up to seven years or with fine or with both.
- **Section 469 of Indian Penal Code of 1860**: Forgery for purpose of harming reputation, shall be punished with imprisoned for up to three years or with fine or with both.
- **Section 471 of Indian Penal Code of 1860**, provides using as genuine a forged document or electronic record shall be punished as if he has himself forged it.
- **Section 472 and Section 473 of Indian Penal Code of 1860**, provide punishment for making or possessing counterfeit seal, plate or other instrument.

## What are Questioned Documents?

When the authenticity of a document or any part of that document is challenged, it is called a “questioned document”. Authenticity can be questioned on the basis of origin, when the origin of that document is doubtful or under question this document is called a disputed or contested or challenged document. Document is defined as any material that contains marks , symbols or signs that conveys a meaning or a message, whereas a questioned document is anything bearing a message whose authenticity remains in question.

Authenticity of the document can be challenged on the following grounds:

1. In cases where signature or thumb impression by the person is admitted but the subject matter is challenged. These kinds of cases may occur when the forger takes a signature or thumb impression on a blank document.
2. When a thumb impression or signature on the document is forged.
3. When any document is altered.
4. Anonymous letters suspected to be written by the victim.
5. Challenged on the basis of age of the document.
6. Carbon copies or Photocopies can also be challenged, if the original document doesn't match with the document carbon copied or Photocopied.

## Preliminary examination of a Questioned Document

A questioned document can be examined in two ways; *firstly*, it can be examined by comparison of signature or writing and *secondly*, it can also be examined scientifically by examining the type of ink, paper, watermark and other elements used to form the document.

Certain factors are to be considered during the preliminary examination of a questioned document:

1. Unusual size of paper or cut or trimmed at margins;
2. More than one type of ink used in writing one type of document;
3. Unnatural spacing between lines or words;
4. Document typed or written after document folded;
5. Continuity of the document by the same writer;
6. Any chemical or physical erasing, substitution, alternation or obliteration, of any kind;
7. Pen pressure used, or any kind of embossed strokes on reverse side;
8. Marks of artificial ageing;
9. Paper torn, mutilated or wetted without any probable cause;
10. Sequence of folds;
11. Or any other unusual features identified.

## Other relevant legal provisions

**Section 73 of Indian Evidence Act of 1872**, provides that the court can direct any person to write any word or figure for the purpose of comparing the words or figures alleged to be written by him. Thus, the court has the authority to compare the disputed signature or handwriting with the specimen to form its opinion. The judge or magistrate is also empowered to appoint a handwriting expert to examine the signatures or handwriting and submit his or her opinion.

**Section 45 of Indian Evidence Act of 1872**, deals with the appointment of experts. Examiner of the electronic evidence is presumed to be an expert. A court can form its opinion based upon the evaluation done by an expert.

**Order 26 Rule 10A of Code of Civil Procedure, 1908** provides for the appointment of a commissioner where any question arises involving any scientific investigation which needs to be done by the person having due knowledge in the field of science.

**Section 293 of Criminal Procedure Code, 1973**, deals with the reports of certain government scientific experts; it states that the report submitted by such expert may be used in inquiry, trial or other proceedings for the purpose of evidence. Such expert can also be summoned and examined by the court.

For a layman any slight change in the formation of any letter or a figure will be not more than a mere irregularity, but for an expert it is more than sufficient to

detect forgery or the mental health of any human being. It is very important for courts to compare the disputed signatures with the specimen signatures to arrive at a justified conclusion of the authenticity of the document. Authenticity or forgery of documents can often decide the fate of a trial. Imagine a situation where there is a breach of contract, the whole suit stands on the foundation of contract. Later, the court finds out that the contract was forged. The entire case on merits will be altered and the issues, cause of action and remedy to the situation will be altered. Hence, it is very important to check the authenticity of the document.