FIELD VISIT REPORT

VISIT TO FORENSIC SCIENCE DEPARTMENT-MYLAPORE,CHENNAI.

DATE OF VISIT: 11/12/2025 (THURSDAY)

DEPARTMENT: FORENSIC MEDICINE & TOXICOLOGY

A Batch of **ILANGATHIR** (2023-2029), 55 students were participated under the guidance of DR.S.THAMODHARAN M.D(S), DR.THAMIZHKKANI M.D(S), DR.JASMINE M.D(S).

OBJECTIVES :-

•To understand the role of forensic science in identification of individuals through skeletal and biological evidence.

•To study how ballistic evidence supports criminal investigations and court proceedings.

•To understand how biological evidence is used to assist police and courts in criminal cases.

•To study how document analysis helps in identifying forgery, alteration, and authenticity.

•To understand the role of forensic science in analyzing evidence related to explosions and sabotage cases.

•To study the role of forensic laboratories in assisting police in narcotic cases.

•To understand the role of clinical toxicology in identifying poisons in blood, urine, vomit, and biological samples.

•To study how toxicological analysis assists in poisoning cases.

•To study the role of DNA analysis in paternity testing and criminal cases.

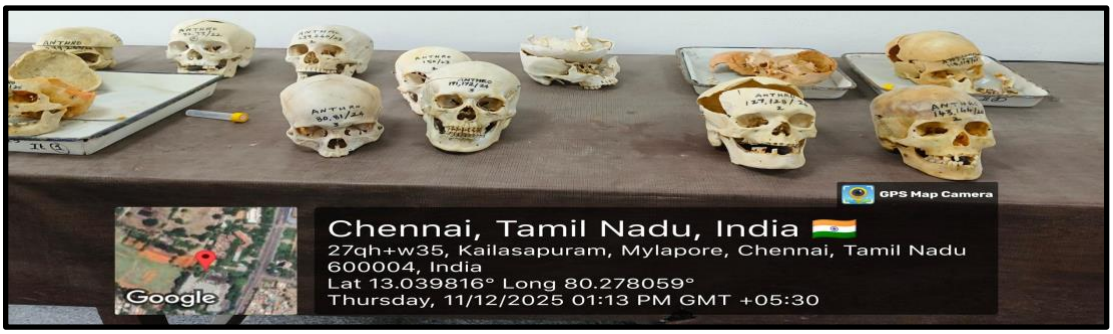
•To study the role of fingerprint evidence in criminal case investigation and verification.

INTRODUCTION SESSION :-

During the introductory session held in the lecture hall, we were given an overview of Forensic Medicine and Toxicology and the functioning of the Forensic Sciences Department. We learned about the scope of forensic science in criminal and civil cases and its role in assisting courts and police through scientific examination of evidence. The experts explained the practical and legal difficulties faced by forensic professionals during investigation and analysis of cases and also the toxicology effect of **Arali(nerium oleander), kuppaimeni(Acalypha indica),malai vembu(Melia dubia)** in real world incidence.This session helped us understand the challenges involved in forensic work and the importance of scientific accuracy and impartiality in the justice system.

1.FORENSIC ANTHROPOLOGY

The Forensic Anthropology department explains the scientific examination of human biological and skeletal remains referred to by courts and police authorities. The division assists in establishing identity by analyzing bones(Skull) using classical and modern scientific techniques. We were also shown real specimens, including a putrefied human head.The objective of this division is to support criminal and civil investigations by providing expert scientific opinions that help in identification and reconstruction of events.



2.BALLISTICS

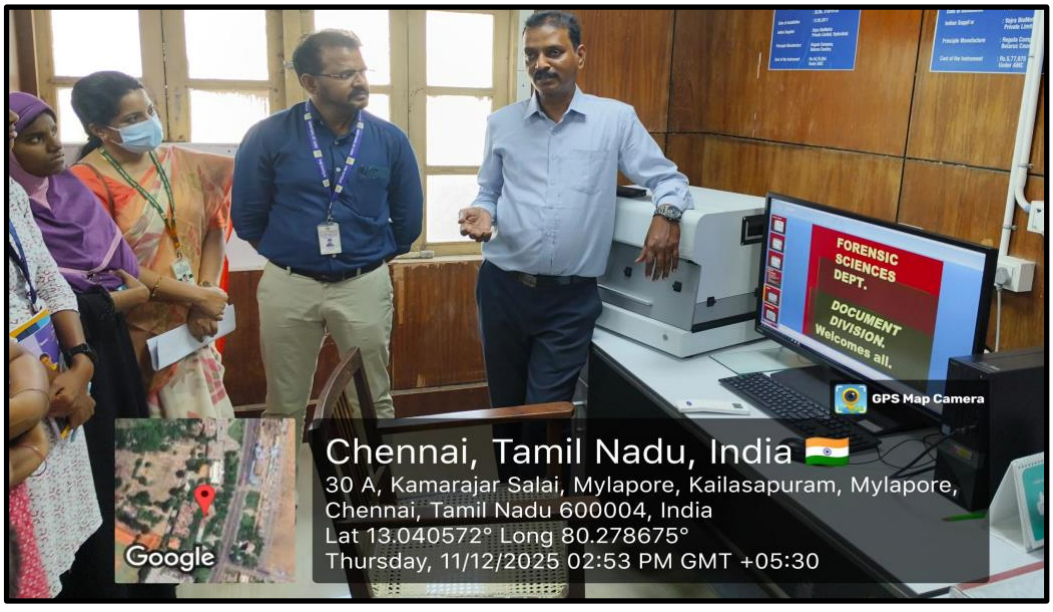
The Ballistics department explained the identification of firearms through comparison of fired cartridge cases and bullets. They clearly described the role of doctors in handling gunshot cases and the procedures followed. Different types of guns and cartridges were shown, along with various gunshot patterns. They also explained how the distance of firing is calculated by observing the gunshot area and explained about how the gunshot test firing cabin works.

3.BIOLOGY

The Biology department explained the analysis of biological evidence such as blood, semen, faeces, and tissue samples. It mainly involves the examination and analysis of biological materials collected from crime scenes.They highlighted the medico-legal importance of these examinations and clearly described the procedures followed in forensic investigations The objective of this division is to study microscopic trace evidence and biological samples to assist police officers and courts in criminal investigations. By employing scientific techniques, this division helps in establishing links between individuals and crime scenes. The biological analysis provides crucial support in crime reconstruction and strengthens the evidentiary value of scientific findings in legal proceedings.

4.DOCUMENTS

In the documentation wing, we learned about the scientific examination and comparison of questioned documents referred by courts and investigating agencies. The officials explained how forged, altered, and duplicate documents are identified using scientific methods and modern instruments. We were informed that the death note related to the school student Kallakurichi incident was examined by this department, highlighting the crucial role of forensic document analysis in sensitive and high-profile cases. The methods used to detect handwriting authenticity, alterations, and falsifications were clearly explained, which helped us understand how document examinations assists courts in arriving at truthful conclusions.

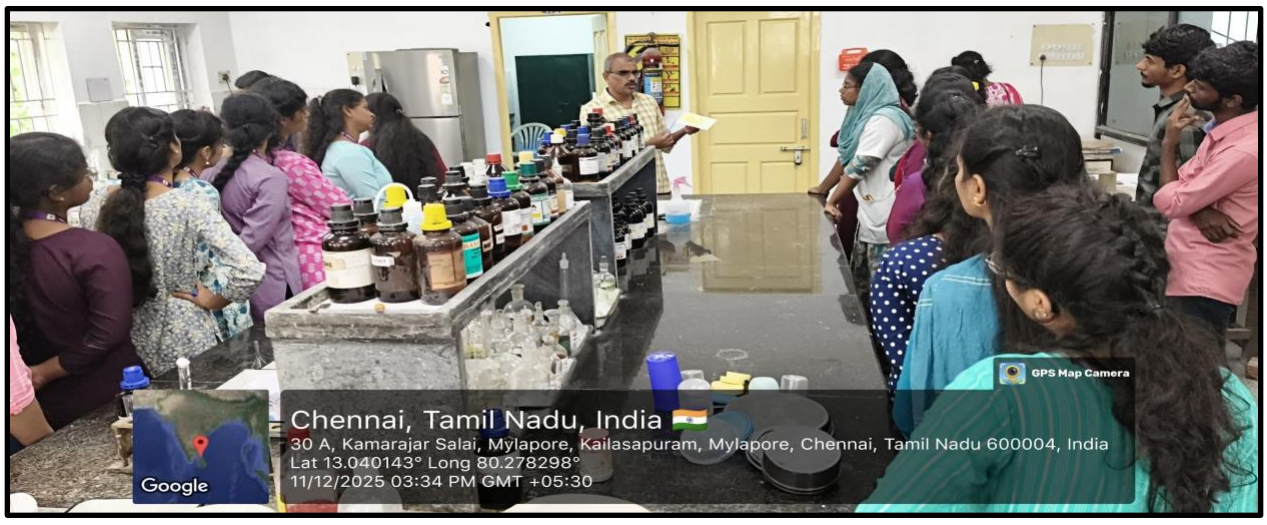


5.EXPLOSIVES

During our visit to the Explosives Wing ,we learned about different types of explosives, including high explosives and low explosives. The experts explained the various scientific instruments and methods used for the detection of explosive substances. We were taught how the type of explosive involved in an explosion is identified in the laboratory through chemical analysis techniques such as titration. The department also displayed various materials used in the preparation of explosives and discussed major case examples, including the Delhi incident, to help us understand real-life applications. Additionally, the officials clearly explained the safety measures and standard procedures followed while handling explosive-related cases. This visit helped us gain a clear understanding of the role of forensic science in explosion-related crime reconstruction and public safety.

6.NARCOTICS

In the Narcotics Wing, we learned about various narcotic and psychotropic substances that come under the NDPS Act. The experts explained the identification, classification, and legal importance of narcotic drugs in detail. We were introduced to different forms of drugs available in the market, including Munaka chocolate, which is a preparation derived from Cannabis sativa used in the form of chocolates. The officials demonstrated the analytical techniques used in the laboratory for drug identification and explained how forensic analysis supports prohibition and narcotic investigations by providing reliable scientific evidence for criminal cases. This visit highlighted the importance of accurate scientific examination in controlling drug-related offences and ensuring effective enforcement of narcotic laws.



7.TOXICOLOGY

During our visit to the Toxicology Wing, we learned about the scientific analysis of poisons and toxic substances present in biological samples such as blood, urine, vomit, and preserved organs. The officials explained the protocols in examination of food samples to ensure they are free from toxic substances, including food meant for the Hon'ble Chief Minister.The department demonstrated chromatography techniques used for detecting poisons, alcohol, and harmful chemicals and explained the procedures followed in medico-legal cases. The experts also shared interesting real-life case examples, including a case from Tamil Nadu where a sister poisoned her parents and brother using arsenic, which clinically resembled cholera. This visit was highly informative and helped us understand the crucial role of forensic toxicology in criminal investigations and court proceedings.

8.DNA & FINGERPRINT

In the Genetics Wing, we learned about DNA analysis and its high level of accuracy in forensic science. The experts explained DNA fingerprinting techniques and the complete procedure involved in DNA analysis for criminal and civil cases, including paternity disputes. The officials also guided us on proper sample collection methods in case investigations, clearly explaining from whom samples should be collected, such as the individuals involved and their relatives, to ensure accurate identification. Real-life case examples were discussed, including a case where a baby was identified and reunited with the mother using DNA analysis. This wing highlighted the importance of advanced scientific technology in providing reliable and conclusive forensic evidence to courts.

9.FORENSIC CHEMISTRY

During our visit to the chemistry Wing, we learned that many cheating and fraud-related cases are commonly handled in this department. The officials explained how chemical methods are used to identify adulteration of antiques and other materials. We were taught about the identification of fake jewellery and other imitation materials using chemical analysis. The experts also explained how fake currency and counterfeit materials are examined scientifically. We learned that this department plays an important role in detecting cases where fake statues, artefacts, and products are sold in place of original ones. This visit helped us understand how forensic chemistry supports the investigation of fraud cases by providing reliable scientific evidence to courts.

CONCLUSION

The field visit to the Forensic Sciences Department, Mylapore, was highly informative and educational. Through this visit, we gained practical exposure to various forensic divisions such as Toxicology, Documentation, Explosives, Narcotics, Chemistry, Anthropology, Genetics (DNA), Ballistics, and Cyber Security. We learned how scientific methods, accurate analysis, and modern technologies are applied in real-life criminal and civil investigations. The explanations and case demonstrations clearly showed that all these departments work with a common goal of delivering justice to the deceased and ensuring that the truth is revealed before the court. This visit strongly emphasized the principle that **“100 guilty persons may escape punishment, but not even one innocent person should be punished” (100 *குற்றவாளிகள் தப்பித்தாலும், ஒரு நிரபராதி கூட தண்டிக்கப்படக் கூடாது*)**. Overall, this field visit enhanced our understanding of the ethical responsibility and scientific integrity required in forensic science, which plays a crucial role in upholding justice in society.