

**Curriculum Plan of Dr. Kapil Mohan Saini
(Odd Semester 2024-2025)
Semester-III**

Name of Paper & Code: SEC: Forensic Chemistry (1 lecture per week)

UPC: 2176000008

Contents	Allocations of Lectures	Month wise Schedule to be followed	Tutorials/ Assignment/ Presentation
<p>UNIT- I History of Development of Forensic Science in India Definitions, Scope and Need of forensic science, Ethics in forensic science, History of forensic science, Basic principles of forensic science, Organizational structure of forensic science laboratories, Different branches in forensic science</p>	2	1 st Week of August – 2 nd week of August	- Syllabus Overview - Reference Books - Problem Solving
<p>UNIT- II Forensic Chemistry Fingerprints Definition, History of fingerprint identification, Fingerprint as forensic evidence, Visible Finger marks, Latent Finger marks, ten-digit classification, Methods of Development of latent fingerprints using conventional methods–Powdering (Black and grey, fluorescent and magnetic), Methods of development of latent fingerprint using chemical method (iodine fuming, silver nitrate, Ninhydrin, Vacuum metal deposition), Automated Fingerprint identification system (AFIS), Poroscopy and Edgescopy</p>	5	3 rd Week of August – 3 rd week of September	- Related Problems, - Assignment
<p>UNIT- III Scope & significance of Forensic Chemistry, Types of cases/exhibits received for analysis. Trap Cases: Collection, and Preliminary analysis of evidence in trap cases. Alcoholic Beverages: Types of alcohols, country made liquor, illicit liquor, denatured spirits, Indian made foreign alcoholic and non-alcoholic beverages. Dyes: Scope & Significance of dyes in crime investigation, analysis of ink by TLC and UV visible spectrophotometry. Petroleum products and their adulterations: Chemical composition of various fractions of Petroleum Products, Analysis of petrol, kerosene, diesel. Fire/Arson and Explosives Fire: Introduction to Fire & Arson, origin of fire, Chemistry of Fire, Fire tetrahedron, Firefighting operations, preservation of fire scene, collection of evidences, Seat of fire, cause of fire, motives, Analysis of fire debris, Case studies related to fire and Arson. Explosive and Explosion: Scope & significance of explosive analysis in forensic science, Types of explosives, deflagration and detonation, explosive trains, collection, preservation and forwarding of exhibits, preliminary analysis of explosives. Dos and Don'ts. Case studies related to explosives.</p>	8	4 th Week of September – 4 th Week of October	Home Register Overview, Class Test,

Drugs of abuse: Classification, including designer drugs. III effects of drugs of abuse, Preliminary and conformatory tests.			
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