Weekly Lesson Plan
B.Sc. (Forensic Science) - I Semester (Odd)
Session- 2017-18

Subject: Forensic Science
Paper I: Basics of Forensic Science
Paper II: Crime Scene Investigation and Management

Week	Dates	Paper	Topic(s)
1.	July 15, 17-22,2017	I	Introduction to the syllabus Introduction, Definition, need , significance and scope of Forensic Science
		II	Crime scene investigation**:** Definition of crime scene, crimes without scene
2.	July 24-29,2017	I	Principle and laws of Forensic Science,.
		II	Classification of crime scene: indoor & outdoor, primary & secondary, macroscopic & microscopic crime scene. Significance of crime scene, argument and ethics of crime scene.
3.	July 31- Aug 5, 2017	I	Domains in Forensic Science : Forensic Biology and serology,
		II	Definition of physical evidence, classification of physical evidence, types of physical evidences, sources of physical evidence
4.	Aug. 7- 12,2017	I	Forensic Medicine, Forensic Toxicology, Forensic Osteology
		II	Signification and value of physical evidence, linkage between crime scene, victim and criminal
5.	Aug. 14-19,2017	I	Forensic Photography and its applications, Ballistics, Fingerprint, Questioned Documents.
		II	Study of some special crime scene such as mass disaster, terror attack, geological scene and explosive etc
6.	Aug. 21-26,2017	I	Forensic Psychology, Detection of Deception Forensic Anthropology.
		II	Cr ime scene management: Introduction to crime scene management, duties of first responding of ficer at the scene of crime
7.	Aug. 28- Sep. 2,2017	I	Wildlife Forensic, DNA profiling

		II	Duties of crime scene investigator, specialized personnel at the crime scene: biological or chemical terrorist crime scene
8.	Sep. 4-9, 2017	I	Forensic Odontology, Forensic Physics
		II	Processing of scene of crime: plan of act ion, protect ion of scene of crime
9.	Sep.11-16,2017	I	Computer Forensic etc. Functions of Forensic Scientist, Police officers.
		II	Photography and video recording of crime scene, sketching of crime scene, searching, collection, preservation, packing of physical evidence
10.	Sep.18-23,2017	I	Prosecution, Judicial Officers and Medico legal expert etc. Problem of proof in Forensic Science.
		II	Documentation of crime scene, forwarding or dispatch of relationship between forensic expert and judiciary of ficer
11.	Sep.25-30,2017	I	Legal admissibility of various evidences, corpus delicti, modus operandi.
		II	Importance of FSL, National and International scenario of FSL,
12.	Oct.3-7, 2017	I	Multi professional and multi personal aspects of forensic science
		II	Facilities provided in forensic science laboratory. Ethical issue in FSL
13.	Oct. 9-14, 2017	I	Professional standards for practice of Criminalistics
		II	Criminal behavior: Introduction of criminal behavior , theories of criminal behavior: psychogenic theory,
14.	Oct. 23-28,2017	I	Ethical issue in Forensic Science: Definition of ethics.
		II	classical and non -classical theories, biological theories, physiological theories
15.	Oct. 30- Nov.4,2017	I	Sanction against expert for unethical conduct.
		II	Economic theory, geographical theories, and sociological theories.

16.	Nov. 6- 13, 2017	I & II	Revision

Weekly Lesson Plan
B.Sc. (Forensic Science) - II Semester (Even)
Session- 2017-18

Subject: Forensic Science
Paper I: Crime Detection
Paper II: Forensic Evidences

Week	Dates	Paper	Topic(s)
1.	Jan. 1-6,2018	I	Introduction to the syllabus Organization set up of Forensic Science Laboratory: Structure and function of SFSL
		II	Definition, types, class and individual characteristics, Principle of exchange, General information provided by physical evidences.
2.	Jan. 8-13,2018	I	RFSL, CFSL and facility provided, MFSL
		II	Different search methods for locating physical evidences at scene of crime, Chain of Custody
3.	Jan. 15-20, 2018	I	Directorate of Forensic Science Service. Police and Forensic scientist relationship
		II	Biological samples Blood, semen, Saliva, urine, vomit, fecal material, hair etc
4.	Jan. 22-27,2018	I	Cr ime detect ion agency: Organization set up and functioning of GEQD, CFI, FB, and NCRB.
		II	Botanical samples - Wood, leaves, pollens, seeds, diatoms etc.
5.	Jan. 29 -Feb 3,2018	I	National Institute of Criminology and Forensic science, Crime investigation department,
		II	Preservation, Packing, labeling, transportation and forwarding of the following physical evidences.
6.	Feb 5-10,2018	I	National Investigation Agency, World Anti-Doping Agency,
		II	Chemical samples volatile liquids, nonvolatile liquids, flammable liquids, solid chemical etc.
7.	Feb.12-17,2018	I	Central Bureau of Investigation, National Police Academy
		II	Toxicological samples -viscera, adulterated food

			stuff, blood, urine, vomit etc. Post mortem samples
8.	Feb. 19-24,2018	I II	Organization set up and functioning of CFI, FB, and NCRB. Preservation, packing, labeling, handling, transportation and forwarding of the following physical evidences.
9.	Feb. 26-27, 2018	I II	Centre for Cellular and Molecular Biology Intelligence Bureau, Research Analysis Wing, Ballistics samples- firearms, ammunitions, GSR etc.
10.	March 5-10,2018	I II	Bureau of Police Research & Development, Organization. Fingerprint , impressions and documents
11.	March, 12-17,2018	I II	National Drug Testing Laboratory and OCTOPUS Physical samples - fiber, glass, textile, wire & cables, dust & soil, cement etc.
12.	March 19-24,2018	I II	Fingerprint Bureau Investigation, Crime Investigation Agency Recognition of Bloodstain Patterns: History of Bloodstain Pattern interpretation,
13.	March 26-31, 2018	I II	Defense Research and Development Organization Properties of human blood, target surface considerations, Size, Shape and Directionality of bloodstains
14.	April 2-7, 2018	I II	Central Police Organization, Central Detective Training School Spattered blood, other Bloodstain Pat terns, interpretation of Bloodstain on clothing and footwear.
15.	April 9- 13,2018	I II	Cr ime Scene Investigation, Drug Enforcement Administrator & Interpol, etc. Documentation and Photography for Bloodstain Pattern Analysis
16.	April 16-21, 2018	I&II	Revision
17.	April 23-28,2018	I&II	Revision

Weekly Lesson Plan
B.Sc. (Forensic Science) - III Semester (Odd)
Session- 2017-18

Subject: Forensic Science
Paper I: Analytical Techniques and Methods used in Forensic Science
Paper II: Questioned Document and Report Writing

Week	Date	Paper	Topic to be Covered
1.	July 15, 17-22,2017	I II	Elementary theory of microscope, scope of microscope in forensic science.Varieties of microscopes, stereoscopic microscopes, fluorescent microscope Forensic Documents: Preliminary examination of questioned documents.
2.	July 24-29,2017	I II	polarizing microscope, comparative microscope, scanning electron microscope (SEM), transmission electron microscope (TEM) Various types of forensic documents
3.	July 31- Aug 5, 2017	I II	Chromatographic parameters – capacity term, selectivity term and efficiency term genuine and forged documents, classification of forensic documents: Specimen writings, admitted writings
4.	Aug. 7- 12,2017	I II	HETP, column efficiency – Van Deemter equation and curve Handling, preservation and marking of documents, natural variation and disguise in writing
5.	Aug. 14-19,2017	I II	Capillary columns, detectors for GLC and HPLC, Principle of Handwriting Identification, general and individual characteristics

6.	Aug. 21-26,2017	I II	temperature programming in GLC and gradient elution in HPLC Basic Tools needed for forensic documents examination and their use
7.	Aug. 28- Sep. 2,2017	I II	Derivatisation for GLC Natural variations, fundamental divergences, Alternations in documents: erases, additions, overwriting and obliterations
8.	Sep. 4-9, 2017	I II	Derivatisation forHPLC. Determination of age of Documents, Sequence of Strokes
9.	Sep.11-16,2017	I II	Forensic applicationsGC-MS Various types of forgeries and their detection. Analysis of paper and inks.
10.	Sep.18-23,2017	I II	Forensic applicationsHPLC-MS Scientific Report writing: - Components of reports and report format relating toCrime Scene and Laboratory findings
11.	Sep.25-30,2017	I II	Forensic applications Py-GC-Ms. Stages in criminal proceedings: - FIR,Investigation, prosecution and trial stage. Remand and bail processes.
12.	Oct.3-7, 2017	I II	Basic principles and applications of – UV-Vis spectroscopy Crimes underSpecial and Local laws: - Crimes under Dowry Prohibition Act
13.	Oct. 9-14, 2017	I II	Infrared spectroscopy Crimes underImmoral Traffic Act, Specific offences under the Indian Penal Code (Homicide, sexual offences, offences against property)
14.	Oct. 23-28,2017	I	Raman spectroscopy,Mass spectroscopy

		II	Classification of offenses: Cognizable and Non cognizable offence
15.	Oct. 30- Nov.4,2017	I	NMR and ESR spectroscopy
		II	Bailable and non bailable offences, compoundable and non-compoundable offences
16.	Nov. 6- 13, 2017	I	Mass spectroscopy
		II	Role of media, Role & Functions of Police

Weekly Lesson Plan
B.Sc. (Forensic Science) - IV Semester (Even)
Session- 2017-18

Subject: Forensic Science
Paper I: Forensic Medicine
Paper II: Forensic Chemistry and Toxicology

Week	Date	Paper	Topic to be Covered
1.	Jan. 1-6,2018	I	Global Medical Jurisprudence, Legal Procedure in India: - Police inquest, Magistrate's inquest, Coroner's inquest, Oath and affirmation
		II	Forensic toxicology - meaning Poison and Types
2.	Jan. 8-13,2018	I	Documentary evidence: - Medical certificates, medical reports, dying declaration
		II	Poisoning Action of Poison
3.	Jan. 15-20, 2018	I	Understanding laws and ethics of medical practice. Medico legal aspects of death
		II	Poisoning Action of Poison
4.	Jan. 22-27,2018	I	Diagnosis of death- somatic & molecular
		II	Classification of poison
5.	Jan. 29 -Feb 3,2018	I	Early and intermediate changes following death
		II	Isolation and analysis of metallic poison As
6.	Feb 5-10,2018	I	Late changes after death - putrefaction, autolysis, bacterial action, factors affecting these changes
		II	Isolation and analysis of metallic poison Pb
7.	Feb.12-17,2018	I	Determination of time since death, including by histopathological methods.
		II	Isolation and analysis of metallic poison Sb

8.	Feb. 19-24,2018	I II	Medico legal investigation of sexual offences, including examination of victims and suspects Isolation and analysis of metallic poison Zn
9.	Feb. 26-27, 2018	I II	Medico legal aspects of death Analysis of ethyl alcohol in biological fluids
10.	March 5-10,2018	I II	Causes of death such as asphyxia, electrocution, thermal trauma, heat burns, starvation, natural death, sudden death, death by accident Analysis of methanol
11.	March, 12-17,2018	I II	Medico legal aspects of wounds: -medical and legal definition of wounds Opium, Semi-synthetic opiates
12.	March 19-24,2018	I II	Types of mechanical and regional injuries, aging of wounds, Cannabis drugs such as Bhang, Ganja and Charas LSD and Amphetamine
13.	March 26-31, 2018	I II	Difference between suicidal, homicidal and accidental wounds General Idea about NDPS Act. Sections 15 – 32, 37
14.	April 2-7, 2018	I II	Injuries, Asphyxia, Unnatural Offences (Sexual Offences) Snake Venom
15.	April 9- 13,2018	I II	Time since death Benzodiazepines
16.	April 16-21, 2018	I II	Identification of living Phenothiazines
17.	April 23-28,2018	I II	Identification of dead Barbiturates

Weekly Lesson Plan
B.Sc. (Forensic Science) - V Semester (Odd)
Session- 2017-18

Subject: Forensic Science

Paper I: Finger prints & Impressions

Paper II: Analytical Techniques and Methods Used in Forensic Science - II

Week	Dates	Paper	Topic(s)
1.	July 15, 17-22,2017	I II	Introduction to the syllabus Fingerprints as evidence: Its recognition, Collection and Preservation Methods of digestion of samples with special reference to microwave digestion
2.	July 24-29,2017	I II	History and Development of fingerprints Methods of separation and isolation with special reference to steam distillation, fractional distillation, sweep distillation, under vacuum distillation
3.	July 31- Aug 5, 2017	I II	Formation of ridges, Fingerprints patterns, Pattern Areas Solvent extraction, solid phase extraction, solid phase micro extraction, supercritical fluid extract ion, micellar extraction
4.	Aug. 7- 12,2017	I II	General and Individual characteristics of fingerprint, Composition of Sweat Microwave accelerated reaction system, density gradient centrifugation, field flow fractionation.
5.	Aug. 14-19,2017	I II	Classification of fingerprints- Henry System of classification, Single digit Classification, Extension of Henry system Dialysis and electro dialysis, head spectra technique
6.	Aug. 21-26,2017	I II	Fingerprint Bureau. AFIS (Automated Electrophoresis – Gel electrophoresis and capillary electrophoresis, basic principles and applications
7.	Aug. 28- Sep. 2,2017	I	Fingerprint Identification System, Search for

		II	Fingerprints, Chance Fingerprints, Latent Fingerprints Laser system – purity of spectral lines, coherence length and coherence time, spatial coherence of a source
8.	Sep. 4-9, 2017	I II	Various methods of development of fingerprints: conventional methods, physical and chemical florescent method, Einstein's A and B coefficients, coherence of induced emissions, conditions for laser action, existence of a meta stable state
9.	Sep.11-16,2017	I II	Magnetic Powder method, fuming method, laser method. Population by inversion by pumping and cavity. He -Ne and Ruby laser.
10.	Sep.18-23,2017	I II	Taking fingerprints from living and dead persons. Different Types of Surfaces (Porous, Semi-porous, non-porous) Application of Laser – spatial coherence and directionality estimate of laser and non- linear optics,
11.	Sep.25-30,2017	I II	Impressions and Prints: Footprints: Importance, Gait Pattern, Casting of footprints in Different medium, Taking Control samples. Application of Laser polarization and including higher order and generation of harmonics,
12.	Oct.3-7, 2017	I II	Lip Prints- Nature, Location, collection and evaluation, taking control samples, Forensic Significance. Momentum mismatch and choice of right crystal and direction for compensation.
13.	Oct. 9-14, 2017	I II	Bite Marks- Nature, Location, collection and evaluation, taking control samples, Forensic Significance. Tyre Marks/prints and Skid marks, taking control samples, Forensic Significance. Basic principles and applications of and gel permeation chromatography
14.	Oct. 23-28,2017	I II	Ear Prints- Nature, Location, collection and evaluation, taking control samples, Forensic Significance Basic principles and applications of adsorption, ion exchange
15.	Oct. 30- Nov.4,2017	I & II	Revision

16.	Nov. 6- 13, 2017	I & II	Revision

Weekly Lesson Plan
B.Sc. (Forensic Science) - VI Semester (Even)
Session- 2017-2018

Subject: Forensic Science

Paper I: Computer Forensics and Biometrics

Paper II: Advanced Forensic Serology and DNA Forensics

Week	Dates	Paper	Topic(s)
1.	Jan. 1-6,2018	I II	Computer and Cyber Crimes: Introduction Advanced Forensic Serology and DNA Forensics
2.	Jan. 8-13,2018	I II	Stand alone computer crimes–Printing of counterfeit currency notes Immunology: Immune System, immune response Innate and acquired immunity and antigens, heptanes and adjuvant.
3.	Jan. 15-20, 2018	I II	Computer Scanners, Imaging Software Photoshop, Photo Paint etc. Lectins: Forensic significance, buffers and serological reagents, methods of sterilization employed for serological work.
4.	Jan. 22-27,2018	I II	Software piracy Antigen-Antibody Reactions: Precipitation, agglutination, complement, neutralization, immune fluorescence.
5.	Jan. 29 -Feb 3,2018	I II	Data Recovery. HLA system: Its applications in paternity testing, pitfalls of HLA system.
6.	Feb 5-10,2018	I II	Networked Computer Crimes: Unauthorized access and interception Forensic examination of Body Fluids : Species of Origin (Immunodiffusion and Immunoelectrophoresis) .
7.	Feb.12-17,2018	I II	Hacking, Computer Viruses, Individualization: Blood Grouping, Enzyme Typing.
8.	Feb. 19-24,2018	I II	Programme manipulations Computer Security DNA Profiling : Introduction, History of DNA

			Typing, human genetics – heredity, alleles,
9.	Feb. 26-27, 2018	I II	Internet, use of Biometric methods with special reference to personal identification. Mutations and population genetics, molecular biology of DNA, variations, polymorphism
10.	March 5-10,2018	I II	Image Processing: Introduction and Process, Image DNA typing systems- RELP analysis. PCR amplifications, sequence polymorphism Mitochondrial DNA, evaluation of results,
11.	March, 12-17,2018	I II	Enhancement and Restoration. Frequency estimate calculations, interpretations, allele frequency determination,
12.	March 19-24,2018	I II	The investigation of erased tapes an analysis of signals (Analog video image processing) match probability – database, quality control, certification and accreditation Analysis of SNP, Y-STR,
13.	March 26-31, 2018	I II	Methods for digital video recording, Digitalization Techniques, Compression, Encryption methods New and future technologies: DNA chips, SNPs and limitations of DNA profiling
14.	April 2-7, 2018	I II	Investigation of Integrity of Images and Videos. Forensic Significance of DNA Profiling: Applications in disputed paternity cases, child swapping, missing person's identity – civil immigrations, veterinary, wildlife and agriculture cases
15.	April 9- 13,2018	I II	Biometrics: Definition, Types of Biometrics Tools Legal perspectives– legal standards for admissibility of DNA profiling, procedural and ethical concerns, status of development of DNA profiling in India and abroad.
16.	April 16-21, 2018	I & II	Revision
17.	April 23-28,2018	I & II	Revision

HEAD
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