

Weekly Lesson Plan
B.Sc. (Forensic Science) - I Semester (Odd)
Session- 2020-21

Subject: Forensic Science

Paper I: Basics of Forensic Science

Paper II: Crime Scene Investigation and Management

Week	Dates	Paper	Topic(s)
1.	Nov 2-7,2020	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.	Nov 9-14,2020	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.	Nov. 16-21,2020	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.	Nov. 23-28,2020	I	Forensic Medicine, Forensic Toxicology, Forensic Osteology
		II	Signification and value of physical evidence, linkage between crime scene, victim and criminal
5.	Nov 30- Dec. 5,2020	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.	Dec 7-12,2020	I	Forensic Psychology, Detection of Deception Forensic Anthropology.
		II	Crime scene management: Introduction to crime scene management, duties of first responding officer at the scene of crime
7.	Dec. 14-19,2020	I	Wildlife Forensic, DNA profiling

		II	Duties of crime scene investigator, specialized personnel at the crime scene: biological or chemical terrorist crime scene
8.	Dec 21-26, 2020	I	Forensic Odontology, Forensic Physics
		II	Processing of scene of crime: plan of action, protection of scene of crime
9.	Dec. 28 2020-Jan 2,2021	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.	Jan 4-9,2021	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 officer
11.	Jan. 11-16,2021	I	Legal admissibility of various evidences, corpus delicti, modus operandi.
		II	Importance of FSL, National and International scenario of FSL,
12.	Jan 18-23, 2021	I	Multi professional and multi personal aspects of forensic science
		II	Facilities provided in forensic science laboratory. Ethical issue in FSL
13.	Jan 25-30, 2021	I	Professional standards for practice of Criminalistics
		II	Criminal behavior: Introduction of criminal behavior , theories of criminal behavior: psychogenic theory,
14.	Feb 1-6, 2021	I	Ethical issue in Forensic Science: Definition of ethics.
		II	classical and non -classical theories, biological theories, physiological theories
15.	Feb 8-13,2021	I	Sanction against expert for unethical conduct.
			Economic theory, geographical theories, and

		II	sociological theories.
16.	Feb 15-20, 2021	I	Revision
		II	

Weekly Lesson Plan
B.Sc. (Forensic Science) - II Semester (Even)
Session- 2020-21

Subject: Forensic Science

Paper I: Crime Detection

Paper II: Forensic Evidences

Week	Dates	Paper	Topic(s)
1.	April 15-17, 2021	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.	April 19-24,2021	I	Directorate of Forensic Science Service. Police and Forensic scientist relationship
		II	Different search methods for locating physical evidences at scene of crime, Chain of Custody
3.	April 26- May 1,2021	I	RFSL, CFSL and facility provided, MFSL
		II	Biological samples Blood, semen, Saliva, urine, vomit, fecal material, hair etc.
4.	May 3-8 ,2021	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.	May 10-15,2021	I	National Institute of Criminology and Forensic science, Cr ime investigation department, Central Bureau of Investigation, National Police Academy
		II	Preservation, Packing, labeling, transportation and forwarding of the following physical evidences.
6.	May 17-22,2021	I	National Drug Testing Laboratory Centre for Cellular and Molecular Biology Intelligence Bureau,
		II	Preservation, packing, labeling, handling, transportation and forwarding of the following physical evidences.
7.	May 24-29,2021	I	Research Analysis Wing, Bureau of Police Research & Development Organization

		II	Toxicological samples -viscera, adulterated food stuff , blood, urine, vomit etc. Post mortem samples
8.	May 31- June 5,2021	I	Defense Research and Development Organization
		II	Chemical samples volatile liquids, nonvolatile liquids, flammable liquids, solid chemical etc.
9.	June 7-12,2021	I	Central Police Organization, Central Detective Training School.
		II	Ballistics samples- firearms, ammunitions, GSR etc. Fingerprint , impressions and documents,
10.	June 14-19, 2021	I	Cr ime Scene Investigation, Drug Enforcement Administrator & Interpol, OCTOPUS etc.
		II	Physical samples - fiber, glass, textile, wire & cables, dust & soil, cement etc
11.	June 21-26,2021	I	National Investigation Agency, World Anti-Doping Agency
		II	Recognition of Bloodstain Patterns: History of Bloodstain Pattern interpretation, properties of human blood, target surface considerations, Size, Shape and Directionality of bloodstains
12.	June 28- July 3,2021	I	Fingerprint Bureau Investigation, Crime Investigation Agency
		II	Spattered blood, other Bloodstain Pat terns, interpretation of Bloodstain on clothing and footwear, Documentation and Photography for Bloodstain Pat tern Analysis.
13.	July 5-10,2021	I & II	Revision

Weekly Lesson Plan

B.Sc. (Forensic Science) - III Semester (Odd)

Session- 2020-21

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.	Nov 2-7,2020	I	Elementary theory of microscope, scope of microscope in forensic science. Varieties of microscopes, stereoscopic microscopes, fluorescent microscope
		II	Forensic Documents: Preliminary examination of questioned documents.
2.	Nov 9-14,2020	I	polarizing microscope, comparative microscope, scanning electron microscope (SEM), transmission electron microscope (TEM)
		II	Various types of forensic documents
3.	Nov. 16-21,2020	I	Chromatographic parameters – capacity term, selectivity term and efficiency term
		II	genuine and forged documents, classification of forensic documents: Specimen writings, admitted writings
4.	Nov. 23-28,2020	I	HETP, column efficiency – Van Deemter equation and curve
		II	Handling, preservation and marking of documents, natural variation and disguise in writing
5.	Nov 30- Dec. 5,2020	I	Capillary columns, detectors for GLC and HPLC,
		II	Principle of Handwriting Identification, general and individual characteristics

6.	Dec 7-12,2020	I	temperature programming in GLC and gradient elution in HPLC
		II	Basic Tools needed for forensic documents examination and their use
7.	Dec. 14-19,2020	I	derivatisation for GLC
		II	Natural variations, fundamental divergences, Alternations in documents: erases, additions, overwriting and obliterations
8.	Dec 21-26, 2020	I	derivatisation for HPLC.
		II	Determination of age of Documents, Sequence of Strokes
9.	Dec. 28 2020-Jan 2,2021	I	Forensic applications GC-MS
		II	Various types of forgeries and their detection. Analysis of paper and inks.
10.	Jan 4-9,2021	I	Forensic applications HPLC-MS
		II	Scientific Report writing: - Components of reports and report format relating to Crime Scene and Laboratory findings
11.	Jan. 11-16,2021	I	Forensic applications Py-GC-MS.
		II	Stages in criminal proceedings: - FIR, Investigation, prosecution and trial stage. Remand and bail processes.
12.	Jan 18-23, 2021	I	Basic principles and applications of – UV-Vis spectroscopy
		II	Crimes under Special and Local laws: - Crimes under Dowry Prohibition Act
13.	Jan 25-30, 2021	I	Infrared spectroscopy,
		II	Crimes under Immoral Traffic Act, Specific offences under the Indian Penal Code (Homicide, sexual offences, offences against property)

14.	Feb 1-6, 2021	I II	Raman spectroscopy, Classification of offenses: Cognizable and Non cognizable offence,
15.	Feb 8-13,2021	I II	NMR spectroscopy Bailable and non bailable offences,
16.	Feb 15-20, 2021	I II	ESR spectroscopy, Mass spectroscopy Role of media, Role & Functions of Police, compoundable and non-compoundable offences

Weekly Lesson Plan

B.Sc. (Forensic Science) - IV Semester (Even)

Session- 2020-21

Subject: Forensic Science

Paper I: Forensic Medicine

Paper II: Forensic Chemistry and Toxicology

Week	Date	Paper	Topic to be Covered
1.	April 15-17, 2021	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.	April 19-24,2021	I	Documentary evidence: - Medical certificates, medical reports, dying declaration
		II	Poisoning Action of Poison
3.	April 26- May 1,2021	I	Understanding laws and ethics of medical practice. Medico legal aspects of death
		II	Poisoning Action of Poison
4.	May 3-8,2021	I	Diagnosis of death- somatic & molecular
		II	Classification of poison
5.	May 10-15,2021	I	Early and intermediate changes following death
		II	Isolation and analysis of metallic poison As
6.	May 17-22,2021	I	Late changes after death - putrefaction, autolysis, bacterial action, factors affecting these changes
		II	Isolation and analysis of metallic poison Pb
7.	May 24-29,2021	I	Determination of time since death, including by histopathological methods.
		II	Isolation and analysis of metallic poison Sb
8.	May 31- June 5,2021	I	Medico legal investigation of sexual offences, including examination of victims and suspects

		II	Isolation and analysis of metallic poison Zn
9.	June 7-12,2021	I	Medico legal aspects of death
		II	Analysis of ethyl alcohol in biological fluids
10.	June 14-19, 2021	I	Causes of death such as asphyxia, electrocution, thermal trauma, heat burns, starvation, natural death, sudden death, death by accident
		II	Analysis of methanol, Snake Venom
11.	June 21-26,2021	I	Medico legal aspects of wounds: -medical and legal definition of wounds, Injuries, Asphyxia, Unnatural Offences (Sexual Offences)
		II	Opium, Semi-synthetic opiates
12.	June 28- July 3,2021	I	Types of mechanical and regional injuries, aging of wounds, Time since death
		II	Cannabis drugs such as Bhang, Ganja and Charas LSD and Amphetamine
13.	July 5-10,2021	I	Difference between suicidal, homicidal and accidental wounds, Identification of living and dead
		II	General Idea about NDPS Act. Sections 15 – 32, 37, Benzodiazepines, Phenothiazines, Barbiturates

Weekly Lesson Plan
B.Sc. (Forensic Science) - V Semester (Odd)
Session- 2020-21

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.	Nov 2-7,2020	I II	Introduction to the syllabus Fingerprints as evidence: Its recognition, Methods of digestion of samples with special reference to microwave digestion
2.	Nov 9-14,2020	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.	Nov. 16-21,2020	I II	Formation of ridges, Fingerprints patterns, Pattern Areas Solvent extraction, solid phase extraction
4.	Nov. 23-28,2020	I II	General and Individual characteristics of fingerprint, Composition of Sweat Solid phase micro extraction, supercritical fluid extract ion, micellar extraction
5.	Nov 30- Dec. 5,2020	I II	Classification of fingerprints- Henry System of classification, Single digit Classification, Extension of Henry system Microwave accelerated reaction system, density gradient centrifugation, field flow fractionation.
6.	Dec 7-12,2020	I II	Fingerprint Bureau. AFIS (Automated Dialysis and electro dialysis, head spectra technique
7.	Dec. 14-19,2020	I II	Fingerprint Identification System, Search for Fingerprints, Chance Fingerprints, Latent Fingerprints Electrophoresis – Gel electrophoresis basic principles and applications
8.	Dec 21-26, 2020	I II	Various methods of development of fingerprints: conventional methods, physical and chemical fiorescent method,

			Capillary electrophoresis, basic principles and applications
9.	Dec. 28 2020-Jan 2,2021	I	Magnetic Powder method, fuming method, laser method.
		II	Laser system – purity of spectral lines, coherence length and coherence time, spatial coherence of a source
10.	Jan 4-9,2021	I	Taking fingerprints from living and dead persons. Different Types of Surfaces (Porous, Semi-porous, non-porous)
		II	Einstein's A and B coefficients, coherence of induced emissions, conditions for laser action, existence of a meta stable state
11.	Jan. 11-16,2021	I	Impressions and Prints: Footprints: Importance, Gait Pattern, Casting of footprints in Different medium, Taking Control samples.
		II	Population by inversion by pumping and cavity. He -Ne and Ruby laser.
12.	Jan 18-23, 2021	I	Lip Prints- Nature, Location, collection and evaluation, taking control samples, Forensic Significance. Tyre Marks/prints and Skid marks, taking control samples
		II	Application of Laser polarization and including higher order and generation of harmonics, momentum mismatch and choice of right crystal and direction for compensation..
13.	Jan 25-30, 2021	I	Bite Marks- Nature, Location, collection and evaluation, taking control samples, Forensic Significance.
		II	Basic principles and applications of and gel permeation chromatography
14.	Feb 1-6, 2021	I	Ear Prints- Nature, Location, collection and evaluation, taking control samples, Forensic Significance
		II	Basic principles and applications of adsorption, ion exchange
15.	Feb 8-13,2021	I	Revision
		II	
16.	Feb 15-20, 2021	I	Revision
		II	

Weekly Lesson Plan
B.Sc. (Forensic Science) - VI Semester (Even)
Session- 2020-21

Subject: Forensic Science

Paper I: Computer Forensics and Biometrics

Paper II: Advanced Forensic Serology and DNA Forensics

Week	Dates	Paper	Topic(s)
1.	April 15-17, 2021	I II	Computer and Cyber Crimes: Introduction Immunology: Immune System, immune response Innate and acquired immunity and antigens, heptanes and adjuvant.
2.	April 19-24,2021	I II	Stand alone computer crimes –Printing of counterfeit currency notes Immunoglobulin: Types, Physio-chemical properties and function, raising of antisera. Lectins: Forensic significance, buffers and serological reagents, methods of sterilization employed for serological work.
3.	April 26- May 1,2021	I II	Computer Scanners, Imaging Software Photoshop, Photo Paint etc. Antigen-Antibody Reactions: Precipitation, agglutination, complement, neutralization, immune fluorescence.
4.	May 3-8 ,2021	I II	Software piracy, Data Recovery. HLA system: Its applications in paternity testing, pitfalls of HLA system. Forensic examination of Body Fluids : Species of Origin (Immunodiffusion and Immunoelectrophoresis)
5.	May 10-15,2021	I II	Networked Computer Crimes: Unauthorized access and interception Individualization: Blood Grouping, Enzyme Typing.
6.	May 17-22,2021	I II	Hacking, Computer Viruses, Programme manipulations Computer Security, DNA Profiling : Introduction, History of DNA Typing, human genetics – heredity, alleles,
7.	May 24-29,2021	I II	Internet, use of Biometric methods with special reference to personal identification. Mutations and population genetics, molecular biology of DNA, variations, polymorphism
8.	May 31- June 5,2021	I	Image Processing: Introduction and Process,

		II	Image Enhancement and Restoration. DNA typing systems- RELP analysis. PCR amplifications, sequence polymorphism Mitochondrial DNA, evaluation of results,
9.	June 7-12,2021	I II	The investigation of erased tapes an analysis of signals (Analog video image processing) Frequency estimate calculations, interpretations, allele frequency determination, match probability – database, quality control, certification and accreditation
10.	June 14-19, 2021	I II	Methods for digital video recording, Digitalization Techniques, Compression, Encryption methods Analysis of SNP, Y-STR,
11.	June 21-26,2021	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 New and future technologies: DNA chips, SNPs and limitations of DNA profiling
12.	June 28- July 3,2021	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.
13.	July 5-10,2021	I II	Revision

Weekly Lesson Plan
M.Sc. (Forensic Science) – VII Semester (Odd)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC 101

Paper: General Forensic Science

Semester: 7th

Week	Date	Topic to be Covered
1.	Nov 2-7,2020	Forensic Science : History, Development, and need of Forensic Science
2.	Nov 9-14,2020	Forensic Science: Forensic Science and its International Perspective, Ethics in Forensic Science
3.	Nov. 16-21,2020	Forensic Science : Duties of Forensic Scientist, Basic Principles of Forensic Science.
4.	Nov. 23-28,2020	Organizational setup of Forensic Science Laboratories: CFSL, FSL, GEQD, DFSS, Central Detective Training School
5.	Nov 30- Dec. 5,2020	Organizational setup of Forensic Science Laboratories: NCRB, Mobile Forensic Science Laboratory, Branches of Forensic Science.
6.	Dec 7-12,2020	Crime Scene Investigation: Introduction, characteristics and types of crime scene, physical evidences, Protection and recording of crime scene
7.	Dec. 14-19,2020	Crime Scene Investigation: Search of physical clues, preservation, chain of custody, packing and forwarding of physical clues, blood pattern analysis.
8.	Dec 21-26, 2020	Fingerprints : introduction, types of fingerprints
9.	Dec. 28 2020-Jan 2,2021	Fingerprints: searching methods, collection and preservation and evaluation.
10.	Jan 4-9,2021	Forensic Photography: Basic principles and techniques of Black & White and colour photography,
11.	Jan. 11-16,2021	Forensic Photography: IR photography, working of digital camera and basics of digital imaging.digital photography,
12.	Jan 18-23, 2021	Forensic Photography: Digital videography. Crime scene and laboratory photography, microphotography.
13.	Jan 25-30, 2021	Criminal Justice System: Structure of Police, Prosecution & Judicial Organizations, Inquest,
14.	Feb 1-6, 2021	Criminal Justice System: Evidence in enquiries and trials, expert witness, Admissibility of forensic reports in court, expert testimony.
15.	Feb 8-13,2021	Computers: Introduction, History of Digital computer, computer organization-hardware
16.	Feb 15-20, 2021	Computers: Circuits for interfacing computer to

		instruments, computer scanners, imaging softwares (Photo paint, Photoshop etc.), MS word, Data library
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Weekly Lesson Plan
M.Sc. (Forensic Science) – VII Semester (Odd)
Session- 2020-21

Subject: Forensic Science
Paper: Instrumental Analysis I

Subject: FSC 102
Semester: 7th

Week	Dates	Paper	Topic(s)
1.	Nov 2-7,2020	I	Microscopy: Principles and techniques of Microscopy: Light Microscope, Phase contrast, Fluorescence, stereomicroscope,
2.	Nov 9-14,2020	I	Polarizing, comparison and Electron Microscope (Scanning, Transmission) Forensic application of microscopy. Microspectrophotometry
3.	Nov. 16-21,2020	I	Chromatography: Introduction Basic principles, types of chromatography, partition and adsorption chromatography techniques.
4.	Nov. 23-28,2020	I	Thin Layer Chromatography: introduction theory and Instrumentation of TLC, HPTLC, stationary phases, visualization methods, densitometer, applications.
5.	Nov 30- Dec. 5,2020	I	Gas chromatography: introduction, principle and Instrumentation of GC, types of GC (GLC, and GSC) and column types and structure, Detectors for GC -TCD,FID, ECD, NPD etc, and evaluation of chromatogram, Pyrolysis GC, GC-MS; forensic applications.
6.	Dec 7-12,2020	I	High Performance liquid chromatography: introduction, principle and Instrumentation of HPLC, injection system, column structure, detectors for HPLC, advantage and limitations of HPLC; their forensic applications.
7.	Dec. 14-19,2020	I	Spectroscopy: Basic principles, property of EMR, interaction of radiation with matters, atomic and molecular spectra; source of radiations
8.	Dec 21-26, 2020	I	Radiations detection devices, wavelength selector, basic components of absorption and emission spectroscopy.

9.	Dec. 28 2020-Jan 2,2021	I	UV-Visible, IR and Raman spectroscopy: introduction, principles, instrumentation, single beam and double beam spectrophotometer, interpretation of spectra,
10.	Jan 4-9,2021	I	Qualitative and quantitative analysis: advantage and limitations of UV, IR and Raman spectrophotometer, forensic applications.
11.	Jan. 11-16,2021	I	Atomic absorption/ emission spectroscopy: introduction, principles, Instrumentation; types of AAS, ICP-AES,
12.	Jan 18-23, 2021	I	Quantitative and qualitative analysis, advantage and limitations of AAS and AES, their forensic applications.
13.	Jan 25-30, 2021	I	Mass Spectroscopy: principle, instrumentation, ion sources, type of mass analyser- quadrupole, time of flight, double focusing, tandem mass spectroscopy, detectors for mass spectroscopy ; their forensic applications.
14.	Feb 1-6, 2021	I	NMR Spectroscopy, Neutron Activation Analysis: introduction and principle, techniques and forensic application
15.	Feb 8-13,2021	I	X-rays spectroscopy; introduction, principles of X ray diffraction and X ray fluorescence technique, their forensic applications.
16.	Feb 15-20, 2021	I	Revision

Weekly Lesson Plan
M.Sc. (Forensic Science) – VII Semester (Odd)
Session- 2020-21

Subject: Forensic Science
Paper: Forensic Biology and Serology

Subject: FSC 103
Semester: 7th

Week	Dates	Topic(s)
1.	Nov 2-7,2020	Forensic Biology: types of biological evidences, identification, collection, preservation, and significance of biological evidence.
2.	Nov 9-14,2020	Hair and fibers: classification, characteristics, forensic identification and evaluation of hair and fibers evidences
3.	Nov. 16-21,2020	Microbial forensics and Entomology: Organisms of Forensic significance, types, isolation and identification.
4.	Nov. 23-28,2020	Introduction to forensic Entomology, insects / invertebrates of forensic importance, collection of entomological evidence, their life cycle,
5.	Nov 30- Dec. 5,2020	The role of aquatic insects in forensics, insects succession on carrion and its relationship to determine time since death.
6.	Dec 7-12,2020	Forensic Botany: Introduction, types, significance, location, collection and Forensic evaluation of botanical evidences such as pollen grains, leaves, seeds etc.
7.	Dec. 14-19,2020	Wood- types, soft and hard wood. Identification and comparison. Diatoms: types, morphology, methods of extraction from tissue and bones, their identification and Forensic significance
8.	Dec 21-26, 2020	Wild life Forensics: scope, different protected and endangered species of animals. Wild life crime investigation- procedure, tools and techniques. Wild life protection act, animal poaching, animal abuse, wild life trading.

9.	Dec. 28 2020-Jan 2,2021	Identification of pug marks. Identification of wild life clue materials such as hair, skin, fur, bones, nails, horn, teeth etc by conventional and modern methods. Case studies related to wild life crime.
10.	Jan 4-9,2021	Forensic Serology: Blood groups – history, biochemistry and genetics of ABO, Rh, MN and other blood group systems, secretors and non secretors, rare alleles.
11.	Jan. 11-16,2021	Blood identification, Methods of ABO blood grouping from dried blood stains and other body fluids, species identification.
12.	Jan 18-23, 2021	Polymorphic Enzymes (PGM, GLO-I, ESD, EAP, AK, ADA etc)- their forensic significance
13.	Jan 25-30, 2021	Body fluids: semen- Introduction, composition, human spermatozoa morphology, Forensic examination and evaluation. Sex determination, X chromosome Inactivation- Barr body.
14.	Feb 1-6, 2021	Other biological fluid clues such as saliva, sweat, urine and milk etc their introduction & collection preservation and examination,
15.	Feb 8-13,2021	Revision
16.	Feb 15-20, 2021	Revision

Weekly Lesson Plan
M.Sc. (Forensic Science) – VII Semester (Odd)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC: 104

Paper: Forensic Psychology and Statistics

Semester: 7th

Week	Date	Topic to be Covered
1.	Nov 2-7,2020	Introduction to Forensic Psychology; scope & ethics
2.	Nov 9-14,2020	Distinction between Forensic and therapeutic evaluation, Genetic basis of Psychology
3.	Nov. 16-21,2020	Legal aspect of forensic psychology practice
4.	Nov. 23-28,2020	Forensic Psychiatry: Introduction, classification of mental disorders
5.	Nov 30- Dec. 5,2020	Forensic Psychiatric Examination, Scope of psychiatric examination in criminal and civil cases
6.	Dec 7-12,2020	Types and classification of crimes and criminals
7.	Dec. 14-19,2020	Criminal Profiling, and Modus Operandi
8.	Dec 21-26, 2020	Brain Fingerprinting, Polygraph
9.	Dec. 28 2020-Jan 2,2021	Hypnosis, Narco Analysis, role in criminal justice system
10.	Jan 4-9,2021	Arithmetic mean, mode and median Definition, calculation and its properties.
11.	Jan. 11-16,2021	Range, Interquartile range, Quartile deviation, Mean deviation and standard deviation.
12.	Jan 18-23, 2021	Correlation
13.	Jan 25-30, 2021	Regression analysis
14.	Feb 1-6, 2021	Concept of sampling and sampling methods
15.	Feb 8-13,2021	Test of significance
16.	Feb 15-20, 2021	Chi-square analysis

Weekly Lesson Plan
M.Sc. (Forensic Science) – VIII Semester (Even)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC: 201

Paper: Forensic Chemistry and Toxicology

Semester: 8th

Week	Date	Topic to be Covered
1.	April 15-17, 2021	Introduction, Colour & Spot test, microcrystal tests, inorganic and organic analysis.
2.	April 19-24, 2021	Analysis of Beverages: alcoholic and nonalcoholic beverages, illicit liquors, detection and estimation of ethanol. Breathe alcohol analyzer.
3.	April 26- May 1, 2021	Analysis of trace evidence – cosmetics dyes, pigments, clues of trap cases.
4.	May 3-8, 2021	Introduction, standard methods of analysis of petroleum product for adulteration as per BIS.
5.	May 10-15, 2021	Arson Investigation: chemistry of fire, Forensic investigation of arson cases.
6.	May 17-22, 2021	introduction, classification, drug of abuse in sports. General chemistry and analysis of narcotic drugs and psychotropic substances
7.	May 24-29, 2021	cocaine, cannabis, barbiturates, benzodiazepines, amphetamine, opium, hallucinogens, designer drugs.
8.	May 31- June 5, 2021	Introduction of NDPS act, drugs and cosmetic act.
9.	June 7-12, 2021	Introduction and scope of forensic toxicology, classification of poisons, legal aspects of poisoning, types of poisoning
10.	June 14-19, 2021	Antidotes, factors modifying action of poisons, LD-50, sign and symptoms of common poisons.
11.	June 21-26, 2021	Collection, preservation of samples; Conventional and recent extraction and isolation methods of poisons.
12.	June 28- July 3, 2021	Pharmacology: theory and principles of absorption, distribution, biotransformation and excretion of drugs/poisons, and their forensic aspects. General studies and Analysis of vegetable poisons: Opium, Abrus, Dhatura, Marking nuts, Nux-vomica, Oleander and Aconite.
13.	July 5-10, 2021	Irrespirable gases, food poisoning, Insecticides and

		Metallic Poisons: introduction, types, Insecticides and Metallic Poisons: Analysis
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Weekly Lesson Plan
M.Sc. (Forensic Science) – VIII Semester (Even)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC: 202

Paper: Instrumental Analysis II

Semester: 8th

Week	Date	Topic to be Covered
1.	April 15-17, 2021	Isolation of DNA, RNA, Purification, Restriction
2.	April 19-24,2021	PCR – DNA amplification, autoradiography, and forensic applications
3.	April 26- May 1,2021	Cell and tissue culture techniques: pH and buffers, culture media preparations
4.	May 3-8,2021	Sterilization techniques and forensic applications
5.	May 10-15,2021	Centrifugation Techniques - Centrifugation, cold and ultracentrifuges basic principle, instrumentation
6.	May 17-22,2021	G-value & relationship between RPM., applications of analytical centrifugation.
7.	May 24-29,2021	Electrophoresis: Introduction, principles, factors affecting electrophoresis,
8.	May 31- June 5,2021	types of electrophoresis. High and low voltage electrophoresis, capillary electrophoresis.
9.	June 7-12,2021	Immune electrophoresis, SDS-PAGE and iso- electric focusing; their application.
10.	June 14-19, 2021	Enzyme kinetics, enzyme assay techniques such as visible UV spectrophotometric methods
11.	June 21-26,2021	Luminescence method, Radioisotope methods and Immuno-chemical methods. Radio chemical techniques: radioisotope, nature of radioactivity Detection and measurements of radioactivity and forensic applications.
12.	June 28- July 3,2021	Immunochemical Techniques: Introduction, Antigen - antibody reactions -theory and principles, Production of antibodies. Immunoprecipitation and agglutination-based techniques such as immunodiffusion, cross over electrophoresis
13.	July 5-10,2021	ELISA, RIA- their basic principle, techniques, and their forensic applications.

Weekly Lesson Plan
M.Sc. (Forensic Science) – VIII Semester (Even)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC:203

Paper: Questioned Document Examination

Semester: 8th

Week	Date	Topic to be Covered
1.	April 15-17, 2021	Introduction and classification of documents, genuine and forged document, and holographic document
2.	April 19-24,2021	Preliminary examination of documents, ways of procurement, handling and marking of document, preservation and reproduction of documents. Basic tools for forensic document examination
3.	April 26- May 1,2021	Handwriting: principle, characteristics of handwriting, Identification and evaluation of handwriting
4.	May 3-8,2021	Types of forgery, characteristic of genuine and forged signature and their examination. Identification of writer of anonymous letter.
5.	May 10-15,2021	Ink and paper examination
6.	May 17-22,2021	Determination of age of documents
7.	May 24-29,2021	Examination of various printing devices and forgeries of printed document
8.	May 31- June 5,2021	Examination of altered documents
9.	June 7-12,2021	Study of advance techniques for examination of alterations such as Projectina, VSC and ESDA
10.	June 14-19, 2021	Photographic techniques to questioned document,
11.	June 21-26,2021	Discovery of facts by comparison with known material
12.	June 28- July 3,2021	Fry test and Daubert standards
13.	July 5-10,2021	Report writing, reasons for opinion, Presentation of expert evidence on documents case

Weekly Lesson Plan
M.Sc. (Forensic Science) – VIII Semester (Even)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC: 204

Paper: Forensic Medicine and Toxicology

Semester: 8th

Week	Dates	Topic(s)
1.	April 15-17, 2021	Forensic Medicine: Characteristics and cause of death; Aphyxial death- Introduction, characteristics and types of asphyxia death (Hanging, strangulation, drowning etc)
2.	April 19-24,2021	Thermal death and their medico legal aspects. Estimation of time since death, post mortem examination
3.	April 26- May 1,2021	Injuries: classification, types and characteristics of mechanical injuries, antimortem and post mortem injury,
4.	May 3-8 ,2021	Artificial injury, grievous injury, and their medicolegal aspects. Investigation of sexual offences, abortion and infanticides
5.	May 10-15,2021	Forensic Odontology: Definition, scope, structural variation and types of teeth. Determination of age and sex from teeth
6.	May 17-22,2021	Method, dental anomalies and their significance
7.	May 24-29,2021	Bite marks: methods of collection, preservation, recording, comparison and their significance.
8.	May 31- June 5,2021	Forensic Anthropology: Definition, scope and problems, structure of bones, morphological study of human skeleton,
9.	June 7-12,2021	Comparative study of human and animal skeleton. Age, sex and stature determination from skeleton remains
10.	June 14-19, 2021	Craniometry: introduction, methods and their importance in personal identification

11.	June 21-26,2021	Osteometry introduction, methods and their importance in personal identification
12.	June 28- July 3,2021	Personal Identification Techniques: portrait parley/ Bertillon system, Superimposition techniques- photographic and video superimposition
13.	July 5-10,2021	Facial reconstruction: introduction, theory and methods, importance of tissue depth to reconstruct various facial futures Genital and congenital anomalies

Weekly Lesson Plan
M.Sc. (Forensic Science) – IX Semester (Odd)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC 301

Paper: Forensic Ballistics And Explosives

Semester: 9th

Week	Date	Topic to be Covered
1.	Nov 2-7,2020	History and Background of Firearms, classification and characteristics of firearms, components of firearms
2.	Nov 9-14,2020	Firing mechanism, smooth bore and rifled bore firearms.
3.	Nov. 16-21,2020	Country made firearms: introduction, constructional features and identification.
4.	Nov. 23-28,2020	Ammunition: classification and composition of cartridges, propellants, cartridge case, wads, compositional aspects of various types of bullets and shotgun projectile.
5.	Nov 30- Dec. 5,2020	Forensic Ballistic: Definition and back ground, internal and external ballistics
6.	Dec 7-12,2020	Forensic Ballistic: factors affecting internal and external ballistics such as size, shape and ignition of propellants, barrel length, pressure curve
7.	Dec. 14-19,2020	Recoil, ballistics coefficient, air resistance, rifling and bullet stability, measurements of trajectory parameters, ricochet phenomenon
8.	Dec 21-26, 2020	Terminal Ballistics: factors affecting wound ballistics, Bullet penetration phenomena
9.	Dec. 28 2020-Jan 2,2021	Terminal Ballistics; characteristic of rifled firearm injury and smooth bore firearm injury, Forensic evaluation of firearms injury.
10.	Jan 4-9,2021	Firearms and Ammunition Linkage: principles, comparison of fired cartridge case and bullets. Gunshot residues: introduction, composition and its forensic evaluation,
11.	Jan. 11-16,2021	Firearms and Ammunition Linkage; chemical and instrumental methods of GSR analysis
12.	Jan 18-23, 2021	Reconstruction of Shooting Incidence: theory of shooting reconstruction
13.	Jan 25-30, 2021	Mathematics of shooting reconstruction, accidental discharge, determination of range and time of fire.
14.	Feb 1-6, 2021	Shot pattern testing, laboratory examination of firearms. Law related to examination of firearms in

		Indian arms act.
15.	Feb 8-13,2021	Explosive: Classification, types, composition and characteristic of low explosives, and high explosive such as black powder, NC, NG, TNT, RDX, PETN, HMX, Dynamite, ANFO etc. Detonators, blasting cap, explosive train, IEDs and pyrotechniques.
16.	Feb 15-20, 2021	Explosion process and effects, effects of blast wave on structures and human. Specific approach to scene of explosion, reconstruction of sequence of events, post blast residues, collection, analysis of explosion residues

Weekly Lesson Plan
M.Sc. (Forensic Science) – IX Semester (Odd)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC 302

Paper: Computer Forensics and Recent Advances

Semester: 9th

Week	Dates	Topic(s)
1.	Nov 2-7,2020	Computer Crime: basics of computers, hardware accessories operating system and software. Types of computer crime
2.	Nov 9-14,2020	networked computer crime, unauthorized access, program manipulation, software piracy
3.	Nov. 16-21,2020	Cyber Crime: Introduction, Internet, definition, common principles, classification of cyber crimes. Hacking, virus,
4.	Nov. 23-28,2020	Obscenity and pornography, encryption and description methods, Investigation of cyber crime: Search and seizure of computer system
5.	Nov 30- Dec. 5,2020	Computer based evidence and jurisdiction. Tools for analysis
6.	Dec 7-12,2020	Fundamental of Computer Security: risk assessment and mitigation developing secure system, security models, damage control,
7.	Dec. 14-19,2020	Assessment and auditing, and network security, Recent advances in computer forensics
8.	Dec 21-26, 2020	Computer simulation, image processing and pattern recognition
9.	Dec. 28 2020-Jan 2,2021	Stenography and cryptography, Forensic linguistics, e- documents, digital signature.
10.	Jan 4-9,2021	Quality Management (ISO/ IEC-17025, NABL): Introduction, general requirement for competence of testing, standardization and

		calibration of forensic laboratories.
11.	Jan. 11-16,2021	Management and technical requirements for quality assurance. Biometrics: definition, scope, types of biometric tool,
12.	Jan 18-23, 2021	Biometrics fingerprint, face, Iris and retina imaging, ear,
13.	Jan 25-30, 2021	Speech recognition, pattern comparison, human gait pattern. Professional ethics and conduct of forensic expert, dealing with news media.
14.	Feb 1-6, 2021	Intellectual property right: copyright and patent, IT act 2000- introduction to offences and penalties.
15.	Feb 8-13,2021	Revision
16.	Feb 15-20, 2021	Revision

Weekly Lesson Plan
M.Sc. (Forensic Science) – IX Semester (Odd)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC 303

Paper: DNA Profiling

Semester: 9th

Week	Dates	Topic(s)
1.	Nov 2-7,2020	Introduction of Human Genome: Human chromosomes and karyotype, human nuclear genome. Mutation-types and cause, gens and alleles, human genetics and heredity.
2.	Nov 9-14,2020	Calculation of allele frequencies. types and properties of DNA, mt DNA, DNA modifying enzymes, restriction enzymes
3.	Nov. 16-21,2020	Forensic DNA Profiling: History and development of DNA finger printing Basic Genotyping: VNTR, STR,
4.	Nov. 23-28,2020	SNPs polymorphism and other classes of DNA polymorphism. DNA markers
5.	Nov 30- Dec. 5,2020	Methods of DNA profiling: Introduction, principle, techniques of RFLP, STRs, SNP profiling
6.	Dec 7-12,2020	Assessment of STR profiling their advantage and limitations. Gender identification: Y-STR and mt-DNA profiling.
7.	Dec. 14-19,2020	DNA Amplification (PCR)- principle, method, factors affecting PCR, advantage of PCR based techniques over RFLP. Blotting techniques: Southern, Northern
8.	Dec 21-26, 2020	Blotting techniques: Western, dot-, slot- and vacuum blotting.
9.	Dec. 28 2020-Jan 2,2021	DNA sample preparation: sample sources for DNA, collection and preservation of samples for DNA testing, conventional and recent methods of DNA extraction, separation

10.	Jan 4-9,2021	DNA Quantitation methods, , DNA sequencing. DNA data base- CODIS
11.	Jan. 11-16,2021	Nucleic acid hybridization: Preparation of nucleic acid probes for DNA profiling Single locus and multi locus probes, and cDNA probes; Methods of labeling of DNA probes- Radioactive and non-radioactive labeling
12.	Jan 18-23, 2021	Detection methods, DNA Micro array technology. Forensic Issues: degraded DNA, contamination,
13.	Jan 25-30, 2021	Forensic Issues: mixed samples and low copy number. Result interpretation, Quality assurance in DFP testing. Legal standards for admissibility of DNA profiling
14.	Feb 1-6, 2021	Forensic Signification of DNA Profiling: personal identification, paternity testing, wild life forensics, veterinary, agriculture and mass disaster.
15.	Feb 8-13,2021	Report writing and presentation of report in case of DNA profiling.
16.	Feb 15-20, 2021	Revision

Weekly Lesson Plan
M.Sc. (Forensic Science) – IX Semester (Odd)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: Advances in Forensic chemistry I

Paper: FSC 304

Semester: 9th

Week	Date	Topic to be Covered
1.	Nov 2-7,2020	Analysis of Beverages: Alcoholic and non-alcoholic beverages and their composition,
2.	Nov 9-14,2020	Analysis of alcoholic beverages as per BIS and PFA Act,
3.	Nov. 16-21,2020	Detection and determination of ethanol, furfural, organic acids, aldehydes
4.	Nov. 23-28,2020	Detection and determination of chloral hydrate and, methanol in liquors by color tests, TLC, GC, and GC-MS methods.
5.	Nov 30- Dec. 5,2020	Analysis of petroleum products and residues: Distillation and fractionation, Standards/methods of commercial analysis of petroleum products as per ASTM and BIS,
6.	Dec 7-12,2020	Analysis of traces of petroleum products in forensic exhibits, Comparison of petroleum products, Adulteration of petroleum products
7.	Dec. 14-19,2020	Oils and fats : introduction, analysis and characterization of various oils and fats
8.	Dec 21-26, 2020	Analysis of gold & other metals in cheating cases
9.	Dec. 28 2020-Jan 2,2021	Extraction and isolation of poisons/ drugs from biological samples: Volatile compounds: Industrial solvent acid and basic Distillation, Non-volatile organic compounds: Neutral non volatile compounds(pesticides/insecticides-oragnophosphorous compound, chlorinated, compounds, carbamates, and pyrethroids)
10.	Jan 4-9,2021	Acidic and basic non volatile compounds -Stas-otto method, DovbrieyNickolls (Ammonium sulphate) method, acid digest and Valov (Tungstate) methods, Solvent extraction,
11.	Jan. 11-16,2021	Toxic Cations: lead, mercury, arsenic -Dry Ashing and Wet digestion process,
12.	Jan 18-23, 2021	Toxic Anions: Dialysis method, total alcoholic extraction method
13.	Jan 25-30, 2021	Recent methods of sample extraction from body fluid: Solid phase extraction, Solid phase micro extraction techniques, liquid phase micro extraction methods
14.	Feb 1-6, 2021	Examination process of suspected poison sample: chemical

		tests, TLC methods,
15.	Feb 8-13,2021	Examination process of suspected poison sample: UV Vis methods
16.	Feb 15-20, 2021	IR spectrometry, GC-MS

Weekly Lesson Plan
M.Sc. (Forensic Science) – IX Semester (Odd)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC 305

Paper: Advance forensic biology 1

Semester: 9th

Week	Date	Topic to be Covered
1.	Nov 2-7,2020	Hair examination: Hair structure, growth and replacement of hair. Identification: Species of origin, variation in different major population groups, somatic origin.
2.	Nov 9-14,2020	Individualization: Blood grouping, enzyme typing and DNA typing
3.	Nov. 16-21,2020	Botanical evidences: Introduction, types, location, collection evaluation and forensic significance. Wood: Type of wood and their identification and comparison.
4.	Nov. 23-28,2020	Pollens: Structure, function, methods of identification and comparison.
5.	Nov 30- Dec. 5,2020	Diatoms: Nature, location, structure, extraction from various body tissues, including bone marrowpreparation of slides, methods of identification and comparison, forensic significance
6.	Dec 7-12,2020	Leaves: Identification of various types of leaves and their anatomy, methods of comparison.
7.	Dec. 14-19,2020	Forensic Microbiology: Types and identification of microbial organisms of forensic significance.
8.	Dec 21-26, 2020	Wild Life Forensics: Introduction, importance, protected and endangered species of Animals and Plants
9.	Dec. 28 2020-Jan 2,2021	Identification of wild life materials such as skin, fur, bones, nails, horn, teeth, flowers and plants
10.	Jan 4-9,2021	Conventional and modern methods Identification of Pug marks of various animals.
11.	Jan. 11-16,2021	Forensic Entomology: Introduction, general entomology
12.	Jan 18-23, 2021	Arthropod biology
13.	Jan 25-30, 2021	Insects of forensic importance
14.	Feb 1-6, 2021	collection of entomological evidence during death investigations
15.	Feb 8-13,2021	The role of aquatic insects in forensic investigations
16.	Feb 15-20, 2021	Insect succession on carrion and its relationship to

		determine time since death, its application to Forensic Entomology
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Weekly Lesson Plan
M.Sc. (Forensic Science) – X Semester (Even)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: FSC 401

Paper: Forensic Physics

Semester: 10th

Week	Date	Topic to be Covered
1.	April 15-17, 2021	Forensic Physics: Introduction and scope, tools and techniques, examination of vehicle in case of road traffic accident, skid marks evaluation.
2.	April 19-24,2021	Glass: Types of glass and their composition-soda-lime, boro-silicate, safety glass, laminated, light-sensitive, tampered/ toughened, wire glass, coloured glass
3.	April 26- May 1,2021	Glass: Matching and comparison. Forensic examinations of glass fractures- rib marks, hackle marks, cone fracture, wavy, backward fragmentation, concentric and radial fractures. Colour, fluorescence, physical measurements,
4.	May 3-8,2021	Glass: refractive index, density gradient, becke-line, specific gravity examination and elemental analysis of glass evidence.
5.	May 10-15,2021	Paint: Types of paint and their composition, macroscopic and microscopic analysis of paint pigments, pigment distribution, micro-chemical analysis- solubility test
6.	May 17-22,2021	Paint: pyrolysis gas chromatography, TLC, colorimetric analysis, IR spectroscopy and X-ray diffraction Elemental analysis, mass spectrometer, interpretation of paint evidence.
7.	May 24-29,2021	Fibre: Types of fibres, forensic aspects of fibre examination- fluorescence, optical properties, refractive index, Birefringence, dye analysis. Physical fit and chemical testing.
8.	May 31- June 5,2021	Fibre:TLC, IR-micro spectroscopy, Py-MS. Difference between natural and man-made fibres .
9.	June 7-12,2021	Miscellaneous Evidences: wire, broken bangles, seals, counterfeit coins, ropes/ strings, synthetic fibers etc their introduction & forensic examination.
10.	June 14-19, 2021	Building Materials: Cement- composition, types, Forensic Analysis- bromoform test, fineness test, ignition-loss test, Identification of adulterated cement. Mortar and concrete analysis.
11.	June 21-26,2021	Soil: Types and composition of soil, sample

		preparation, removal of contaminants, colour, molecular particle size distribution, turbidity test, pH measurements, microscopic examination density gradient analysis, ignition-loss test, elemental analysis, interpretation of soil evidence.
12.	June 28- July 3,2021	Tool Marks: theory, types of tool marks, and their forensic examination, Restoration methods of obliterated marks.
13.	July 5-10,2021	Voice Analysis and Tape Authentication: theory of voice production, theory of voice identification, the sound spectrograph, voice comparison -standards and methods of voice comparison, significance.

Weekly Lesson Plan
M.Sc. (Forensic Science) - X Semester (Even)
Session- 2020-2021

Class: M.Sc. Forensic Science

Subject: FSC 402

Paper: Forensic Dactylography and other Impressions

Semester: 10th

Week	Dates	Topic(s)
1.	April 15-17, 2021	History and development of finger prints
2.	April 19-24,2021	Morphology of ridged skin, types, and variations in finger prints: Causes and genetics, population variations. Finger Prints Bureau.
3.	April 26- May 1,2021	Sample collection: Basics of taking inked prints, collection of prints samples of living and deads, devices and material for recording prints.
4.	May 3-8 ,2021	Classification of finger Prints, pattern types, pattern area.
5.	May 10-15,2021	Extension of Henry system searching of finger prints, single finger print.
6.	May 17-22,2021	Chance Finger Prints: Latent prints, plastic prints, causes, composition of sweat.
7.	May 24-29,2021	Development of latent finger prints: powder methods: such as fluorescent powder, magnetic powder. Fuming methods: Iodine and cyanoacrylate methods.
8.	May 31- June 5,2021	Chemical methods: Ninhydrin and its analogue silver nitrate, application of laser technologies, metal deposition method. Biological methods of development of latent prints on skin.
9.	June 7-12,2021	Latent print processing Systematic approach to latent print processing, preserving and lifting of finger prints. Photography of Finger Prints, comparison of finger prints: basis of comparison, class characteristics, individual characteristics, various types of ridge characteristics
10.	June 14-19, 2021	Automatic Finger Print Identification system (AFIS) and its variants, Digital Image processing of finger prints and their enhancement. Presentation of expert evidence on finger prints in court
11.	June 21-26,2021	Foot / footwear/ Tyre impressions: introduction, class and individual characteristics, types, collection, preservation and forensic examination and evaluation of impressions, Gait pattern
12.	June 28- July 3,2021	Lip Prints /Ear Prints – Nature, location, collection, forensic examination, and significance.
13.	July 5-10,2021	Revision

Weekly Lesson Plan
M.Sc. (Forensic Science) – X Semester (Even)
Session- 2020-21

Class: M.Sc. Forensic Science

Subject: Advances in Forensic chemistry II

Paper: 403

Semester: 10th

Week	Date	Topic to be Covered
1.	April 15-17, 2021	Analysis of Narcotic Drugs and Psychotropic Substances: Introduction classification of narcotic substances, natural narcotics, semi synthetic and synthetic narcotic substances.
2.	April 19-24,2021	Opiate: extraction of alkaloids from plant materials, a analysis of opium alkaloids, and derivatives using spot tests, microcrystal tests,
3.	April 26- May 1,2021	Opiate: TLC, UV- vis spectrometry, IR spectrometry, GC-MS
4.	May 3-8,2021	Cannabis: introduction, chemistry, analysis by spot tests
5.	May 10-15,2021	Cannabis: TLC, and UV, and IR, spectrometry, GC – MS
6.	May 17-22,2021	Barbiturates: chemistry, types, extraction and isolation
7.	May 24-29,2021	Barbiturates: , characterization by spot tests, TLC, and IR spectrometry, HPLC – MS
8.	May 31- June 5,2021	Benzodiazepines: Introduction, types and classification, chemistry, characterization by spot tests, TLC, and UV and IR spectrometry, GC – MS etc
9.	June 7-12,2021	Amphetamines: chemistry, characterization by spot tests, TLC, and UV and IR spectrometry, GC – MS, NMR etc.
10.	June 14-19, 2021	Hallucinogens (LSD, psilocybine and mescaline): Introduction, analysis: spot tests, TLC, and IR spectrometry, HPLC – MS, GC- MS
11.	June 21-26,2021	Plants poisons: Introduction and classification of plants alkaloids. Analysis of different plants poisons of forensic significance using spot tests, microcrystal tests, TLC and other sophisticated techniques.
12.	June 28- July 3,2021	Poisonous seeds: Abrusprecatorius, Atropa belladonna, Argemone mexicana, Cerberathevetia, Croton tiglium, Datura fastuosa, Ricinus communis
13.	July 5-10,2021	Poisonous fruits: Semicarpus anacardium, Urginea scilla. Poisonous roots: Digitalis, Aconitum napellus, Plumbago rosea. Poisonous Mushroom

Weekly Lesson Plan
M.Sc. (Forensic Science) – X Semester (Even)
Session- 2020-21


Class: M.Sc. Forensic Science

Subject: FSC 404

Paper: Advance Forensic Biology II

Semester: 10th

Week	Date	Topic to be Covered
1.	April 15-17, 2021	Immunology: Immune system, immune response, innate and acquired immunity and antigens, haptenes and adjuvants.
2.	April 19-24,2021	Immunoglobulin: Types, physio-chemical properties and function, raising of antisera
3.	April 26- May 1,2021	Lectins: Forensic significance, buffers and serological reagents, methods of sterilization employed for serological work.
4.	May 3-8,2021	Antigen-Antibody Reactions: Precipitation, agglutination, complement, neutralization, immunofluorescence.
5.	May 10-15,2021	HLA system: Its applications in paternity testing, pitfalls of HLA system.
6.	May 17-22,2021	Forensic examination of Body fluids: Blood: Identification (Preliminary and confirmatory tests)
7.	May 24-29,2021	Species of origin; Immunodiffusion and Immuno-electrophoresis
8.	May 31- June 5,2021	Individualization: Blood grouping, enzyme typing
9.	June 7-12,2021	Semen: Composition, functions and morphology of spermatozoa
10.	June 14-19, 2021	Identification and preliminary test, confirmatory tests including Azoospermic semen stains forensic significance of saliva, sweat, milk, urine
11.	June 21-26,2021	Faecal matter, vaginal secretions and tests for their identification including the presence of blood group specific ABH substances. Polymorphic enzymes: Forensic significance, identification from fresh blood and stains.
12.	June 28- July 3,2021	Paternity disputes: Causes, Various serological methods and biochemical methods
13.	July 5-10,2021	Calculation of paternity index and probability for paternity and maternity

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