SHRI JAGDISHPRASAD JHABARMAL TIBREWALA UNIVERSITY

Certificate program in forensic sciences

Title of the program: Certificate program in forensic sciences

Program contents:

- An introduction to forensic sciences (15 Hrs)
- History and development of forensic science (12 Hrs)
- Understanding the Indian police and legal system (12 Hrs)
- Crime scene investigation (15 Hrs)
- Questioned document examination (12 Hrs)
- Forensic ballistics (12 Hrs)
- Forensic marks: Tool marks, tyre marks , foot prints, lip prints (12 Hrs)
- Physical evidence: Types, handling and analysis (12 Hrs)
- Forensic fingerprints (12 Hrs)
- Forensic medicine: An aid to criminal investigation (14 Hrs)
- Forensic anthropology and odontology (24 Hrs)
- Forensic psychology: Polygraph, Narco-analysis and BEOS (24 Hrs)
- Forensic biology: Blood stain analysis (12 Hrs)
- Mock crime scene investigation (12 Hrs)

We will also provide

- Field visit
- Expert lectures

Lesson Plan

Content: Introduction to forensic sciences
Date and time: Week 1, Monday, 2:00PM to 4:00PM
Topic: Definition and basics of forensic sciences
Learning outcomes:

- Able to understand what is forensic science
- Able to understand basic theories behind forensic science
- Explain why it is important to study forensic science

Time	Activity	Resources
2:00 - 2:30	Definition of forensic sciences	Printed handout
2:30 - 3:00	Theories behind forensic science	Printed handout
3:00 - 3:30	Importance of forensic science	Printed handout
3:30 - 4:00	Group discussion	

Content: Introduction to forensic sciences
Date and time: Week 1, Tuesday, 2:00PM to 4:00PM
Topic: Need and scope of forensic science
Learning outcomes:

- Able to understand what is the need forensic science
- Explain scope of studying forensic science

Time	Activity	Resources
2:00 - 2:30	Need of forensic science	Printed handout
2:30 - 3:00	Discuss current crime scenario	Printed handout
3:00 - 3:30	Scope of forensic science	Printed handout
3:30 - 4:00	Group discussion	

Content: Introduction to forensic sciences
Date and time: Week 1, Wednesday, 2:00PM to 4:00PM
Topic: Laws and principles of forensic science
Learning outcomes:

- Able to understand basic principles forensic science
- Able to understand the 7 laws of forensic science

Time	Activity	Resources
2:00 - 2:30	Introduce principles forensic sciences	Printed handout
2:30 - 3:00	Law of individuality, principle of exchange, law of progressive change	Printed handout
3:00 - 3:30	Principle of comparison, principle of analysis, law of probability, law of circumstantial facts	Printed handout
3:30 - 4:00	Group discussion	

Content: Introduction to forensic sciences
Date and time: Week 1, Thursday, 2:00PM to 4:00PM
Topic: Various fields of forensic sciences
Learning outcomes:

- Able to understand the various sciences behind forensic science
- Able to understand the branches of forensic science

Time	Activity	Resources
2:00 - 2:30	Discuss various branches of forensic science with chart	Printed handout
2:30 - 3:00	Trace evidence analysis, forensic toxicology, forensic serology, forensic chemistry, forensic biology, forensic anthropology, forensic odontology, forensic photography, speaker identification unit.	Printed handout
3:00 - 3:30	Forensic psychology, digital forensics, questioned documents, fingerprints, forensic ballistics, forensic physics, DNA fingerprinting, crime scene unit	Printed handout
3:30 - 4:00	Group discussion	

Content: Introduction to forensic sciences
Date and time: Week 1, Friday, 2:00PM to 4:00PM
Topic: Role and duties of forensic scientist
Learning outcomes:

- Able to understand the role and duties of forensic scientist
- Able to understand how a forensic scientist work

Time	Activity	Resources
2:00 - 2:30	Discuss about the need of forensic scientist	Printed handout
2:30 - 3:00	Role and duties of forensic scientist: evidence collection, analysis, report writing, chain of custody and expert testimony	Printed handout
3:00 - 3:30	Skills of forensic scientists: communication, composure, critical thinking, detail oriented, problem solving.	Printed handout
3:30 - 4:00	Group discussion	

Content: Introduction to forensic sciences
Date and time: Week 1, Saturday, 2:00PM to 4:00PM
Topic: Forensic science and criminal law
Learning outcomes:

- Able to understand importance of forensic science in law
- Able to know what is expert testimony
- Able to understand the importance of forensic reports and chain of custody in trials

Time	Activity	Resources
2:00 - 2:30	Discuss about the importance of forensic science in law	Printed handout
2:30 - 3:00	Expert testimony in court	Printed handout
3:00 - 3:30	Importance of forensic reports and chain of custody in court trials	Printed handout
3:30 - 4:00	Group discussion	

Content: Introduction to forensic sciences
Date and time: Week 2, Monday, 2:00PM to 4:00PM
Topic: Forensic science and media
Learning outcomes:

- Able to understand the positive impact of media in context to forensic cases
- Able to understand the negative impact of media in context to forensic cases

Time	Activity	Resources
2:00 - 2:30	Discuss about the impact of media on forensic science and case trials	Printed handout
2:30 - 3:00	Positive impact of media in crime cases	Printed handout
3:00 - 3:30	Negative impact of media in crime cases	Printed handout
3:30 - 4:00	Group discussion	

Content: Introduction to forensic sciences
Date and time: Week 2, Tuesday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Introduction of forensic sciences
3:00 - 4:00	Quiz and discussion

Content: History and development of forensic science
Date and time: Week 2, Wednesday, 2:00PM to 4:00PM
Topic: Origin of forensic science and early methods
Learning outcomes:

- Able to know from where the word forensic science evolved
- Able to understand the origin of forensics

Time	Activity	Resources
2:00 - 2:30	Discuss about the meaning of word forensics and its evolution	Printed handout
2:30 - 3:00	Early methods used for crime detection	Printed handout
3:00 - 3:30	Origin of forensic science	Printed handout
3:30 - 4:00	Group discussion	

Content: History and development of forensic science
Date and time: Week 2, Thursday, 2:00PM to 4:00PM
Topic: History of forensic science
Learning outcomes:

- Able to know the history of forensic science around the world
- Able to know the history of forensic science around the India

Time	Activity	Resources
2:00 - 2:30	History of forensic science around the world	Printed handout
2:30 - 3:00	Earlier methods used for crime detection	Printed handout
3:00 - 3:30	History of forensic science in India	Printed handout
3:30 - 4:00	Group discussion	

Content: History and development of forensic science
Date and time: Week 2, Friday, 2:00PM to 4:00PM
Topic: Development of forensic science
Learning outcomes:

- Able to know the development of various fields of forensic sciences

Time	Activity	Resources
2:00 - 2:30	Contribution of sir Arthur Conan Doyle Sci-fi author in late 1800’s	Printed handout
2:30 - 3:00	Contribution of Mathieu Orfila (1787-1853) “father of	Printed handout

	toxicology”	
3:00 - 3:30	Contribution of Alphonse Bertillon (1853- 1914) “father of anthropometry”, Francis Galton (1822-1911) “father of fingerprinting”	Printed handout
3:30 - 4:00	Group discussion	

Content: History and development of forensic science
Date and time: Week 2, Saturday, 2:00PM to 4:00PM
Topic: Development of forensic science
Learning outcomes:

- Able to know the development of various fields of forensic sciences

Time	Activity	Resources
2:00 - 2:30	Contribution of Leone Lattes (1891-1954) “father of bloodstain identification”, Calvin Goddard (1891-1955) “father of Ballistics”	Printed handout
2:30 - 3:00	Contribution of Albert Osborn (1858-1946) “father of document examination	Printed handout
3:00 - 3:30	Contribution of Walter McCrone (1916-2002) “father of microscopic forensics”, Hans Gross (1847-1915) “father of forensic publications”	Printed handout
3:30 - 4:00	Group discussion	

Content: History and development of forensic science
Date and time: Week 3, Monday, 2:00PM to 4:00PM
Topic: Development of forensic science
Learning outcomes:

- Able to know the development of various fields of forensic sciences

Time	Activity	Resources
2:00 - 2:30	Contribution of Edmond Locard (1877-1966) “father of crime lab”, Locard’s exchange principle	Printed handout
2:30 - 3:00	Contribution of J.Edgar hoover “father of the CBI”, Alec jeffreys: invented Dna profiling	Printed handout
3:00 - 3:30	William M. Bass (1928-) : The body farm, The frye	Printed handout

	standard (1923)	
3:30 - 4:00	Group discussion	

Content: History and development of forensic science
Date and time: Week 3, Tuesday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: history and development of forensic science
3:00 - 4:00	Quiz and discussion

Content: Understanding the police and legal system
Date and time: Week 3, Wednesday, 2:00Pm to 4:00Pm
Topic: Criminal justice system
Learning outcomes:

- Able to understand the role of criminal justice system
- Able to know the three components of criminal justice system
- Able to understand the stages of criminal justice process

Time	Activity	Resources
2:00 - 2:30	Role of criminal justice system: enforcing law, preventing crime	Printed handout
2:30 - 3:00	Three components of criminal justice system: law enforcement, courts, correction	Printed handout
3:00 - 3:30	Stages of criminal justice process:investigation, arrest, prosecution	Printed handout
3:30 - 4:00	Group discussion	

Content: Understanding the police and legal system
Date and time: Week 3, Thursday, 2:00PM to 4:00PM
Topic: Role of police in criminal justice system
Learning outcomes:

- Able to understand the contribution of police in criminal justice system
- Able to understand the investigation procedure followed by indian police

- Able to understand the limitations of police under indian laws

Time	Activity	Resources
2:00 - 2:30	Contribution of police in criminal justice system: power of police to investigate	Printed handout
2:30 - 3:00	Police procedure for investigation, examination of witness	Printed handout
3:00 - 3:30	Power of police to submit charge sheet after completing investigation and limitations of police under indian laws	Printed handout
3:30 - 4:00	Group discussion	

Content: Understanding the police and legal system
Date and time: Week 3, Friday, 2:00PM to 4:00PM
Topic: Crime scenario in India
Learning outcomes:

- Able to understand crime
- Able to understand the various types of crimes in india

Time	Activity	Resources
2:00 - 2:30	Definition of crime and its classification	Printed handout
2:30 - 3:00	Different types of crime:crime violent crime,property crime, white collar crime, organized crime, consensual or victimless crime	Printed handout
3:00 - 3:30	Crime rate and statistics in india	Printed handout
3:30 - 4:00	Group discussion	

Content: Understanding the police and legal system
Date and time: Week 3, Saturday, 2:00PM to 4:00PM
Topic: Indian legal system
Learning outcomes:

- Able to understand the Indian legal system
- Able to understand the structure of Indian judicial system

Time	Activity	Resources

2:00 - 2:30	Brief introduction and history of Indian legal system	Printed handout
2:30 - 3:00	Indian constitution and introduction to criminal law	Printed handout
3:00 - 3:30	Structure of Indian judicial system	Printed handout
3:30 - 4:00	Group discussion	

Content: Understanding the police and legal system
Date and time: Week 4, Monday, 2:00PM to 4:00PM
Topic: Introduction to various Indian law enforcement agencies
Learning outcomes:

- Able to know various central armed forces and central investigation agencies in India

Time	Activity	Resources
2:00 - 2:30	Introduction to central agencies and federal law enforcement agencies	Printed handout
2:30 - 3:00	Central armed forces: BSF, CISF, CRPF, ITBP, NSG, SSB	Printed handout
3:00 - 3:30	Central investigation and intelligence institutions: CBI, IT dept, DRI, NIA, NRCB, NCRB, Central forensic institutions: CFSL, NICFS	Printed handout
3:30 - 4:00	Group discussion	

Content: Understanding the police and legal system
Date and time: Week 4, Tuesday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: understanding the police and legal system
3:00 - 4:00	Quiz and discussion

Content: Crime scene investigation
Date and time: Week 4, Wednesday, 2:00PM to 4:00PM
Topic: Basics of crime scene
Learning outcomes:

- Able to understand what is a crime scene
- Able to know the forensic importance of crime scene

Time	Activity	Resources
2:00 - 2:30	Definition and types of crime scene	Printed handout
2:30 - 3:00	Forensic importance of crime scene	Printed handout
3:00 - 3:30	Police work at crime scene	Printed handout
3:30 - 4:00	Group discussion	

Content: Crime scene investigation
Date and time: Week 4, Thursday, 2:00PM to 4:00PM
Topic: Principles and steps of crime scene investigation
Learning outcomes:

- Able to understand what is a crime scene investigation, its purpose and importance
- Able to know the 7 steps of crime scene investigation
- Able to understand the importance and duties of the first responding officer at a crime scene

Time	Activity	Resources
2:00 - 2:30	Purpose and principles of crime scene investigation	Printed handout
2:30 - 3:00	Basic 7 steps of crime scene investigation	Printed handout
3:00 - 3:30	3 I's of investigation, role and duties of first responding officer at crime scene	Printed handout
3:30 - 4:00	Group discussion	

Content: Crime scene investigation
Date and time: Week 4, Friday, 2:00PM to 4:00PM
Topic: Crime scene processing
Learning outcomes:

- Able to understand the importance and identification of physical evidences at crime scene
- Able to know the search methods used for crime scene investigation
- Able to know the significance of documentation at crime scene

Time	Activity	Resources
2:00 - 2:30	Importance and steps of crime scene processing	Printed handout

2:30 - 3:00	Physical evidence: Identification and importance at crime scene	Printed handout
3:00 - 3:30	Search methods for crime scene investigation, crime scene documentation	Printed handout
3:30 - 4:00	Group discussion	

Content: Crime scene investigation
Date and time: Week 4, Saturday, 2:00PM to 4:00PM
Topic: Crime scene investigation techniques I
Learning outcomes:

- Able to understand techniques used for collection of physical evidences and their preservation at crime scene
- Able to know the technique of crime scene sketching and its forensic significance

Time	Activity	Resources
2:00 - 2:30	Techniques used for identification and collection of physical evidences	Printed handout
2:30 - 3:00	Techniques used for preservation and transportation of physical evidences	Printed handout
3:00 - 3:30	Crime scene sketching: techniques and forensic significance	Printed handout
3:30 - 4:00	Group discussion	

Content: Crime scene investigation
Date and time: Week 5, Monday, 2:00PM to 4:00PM
Topic: Crime scene investigation techniques II
Learning outcomes:

- Able to understand the importance and techniques of crime scene photography
- Able to understand the methods used for collection and preservation of fingerprints at crime scene
- Able to know the significance of chain of custody

Time	Activity	Resources
2:00 - 2:30	Crime scene photography: techniques and importance	Printed handout
2:30 - 3:00	Collection and preservation of fingerprints at crime scene	Printed handout

3:00 - 3:30	Forensic significance of chain of custody	Printed handout
3:30 - 4:00	Group discussion	

Content: Crime scene investigation
Date and time: Week 5, Tuesday, 2:00PM to 4:00PM
Topic: Crime scene reconstruction
Learning outcomes:

- Able to understand the purpose and principles of crime scene reconstruction
- Able to understand the stages of crime scene reconstruction

Time	Activity	Resources
2:00 - 2:30	Definition, purpose and principles of crime scene reconstruction	Printed handout
2:30 - 3:00	Theories of crime scene reconstruction	Printed handout
3:00 - 3:30	Stages of crime scene reconstruction	Printed handout
3:30 - 4:00	Group discussion	

Content: Crime scene investigation
Date and time: Week 5, Wednesday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: understanding the police and legal system
3:00 - 4:00	Quiz and discussion

Content: Questioned document examination
Date and time: Week 5, Thursday, 2:00PM to 4:00PM
Topic: Introduction to questioned documents
Learning outcomes:

- Able to understand the definition and types of questioned documents

- Able to understand the need of questioned document examination
- Able to know the types of questioned document cases and their examination

Time	Activity	Resources
2:00 - 2:30	Questioned documents: definition, types and types of cases involved	Printed handout
2:30 - 3:00	Need and scope of questioned document examination	Printed handout
3:00 - 3:30	Types of questioned document examination	Printed handout
3:30-4:00	Group discussion	

Content: Questioned document examination
Date and time: Week 5, Friday, 2:00PM to 4:00PM
Topic: Handwriting
Learning outcomes:

- Able to understand the definition and basic principles of handwriting
- Able to understand various handwriting characteristics and their comparative analysis

Time	Activity	Resources
2:00 - 2:30	Handwriting: definition and basic principles	Printed handout
2:30 - 3:00	Handwriting characteristics	Printed handout
3:00 - 3:30	comparative analysis of handwriting sample	Printed handout
3:30-4:00	Group discussion	

Content: Questioned document examination
Date and time: Week 5, Saturday, 2:00PM to 4:00PM
Topic: Handwriting examination
Learning outcomes:

- Able to examine handwriting samples on the basis of various characteristics
- Able to know forensic significance of handwriting examination

Time	Activity	Resources
2:00 - 2:30	Identification of handwriting characteristics	Printed handout
2:30 - 3:00	Handwriting characteristics examination: line quality,	Printed handout

	spacing, size and proportion, penlifts, connecting strokes, unusual letter	
3:00 - 3:30	Handwriting characteristics examination: pen pressure, alignment, speed Forensic significance of handwriting examination	Printed handout
3:30-4:00	Group discussion	

Content: Questioned document examination
Date and time: Week 6, Monday, 2:00PM to 4:00PM
Topic: Forgery
Learning outcomes:

- Able to understand forgery, its types and methods used for forgery
- Able to know forensic linguistics and various analysis techniques

Time	Activity	Resources
2:00 - 2:30	Forgery: definition, methods and types	Printed handout
2:30 - 3:00	Document alterations and forensic linguistics	Printed handout
3:00 - 3:30	Ink analysis, paper analysis, copying and printing device analysis Instruments used for questioned document examination	Printed handout
3:30-4:00	Group discussion	

Content: Questioned document examination
Date and time: Week 6, Tuesday: 2:00PM to 4:00PM
Topic: Counterfeiting and practical
Learning outcomes:

- Able to know the concept of counterfeiting
- Able to analyse a given handwriting sample

Time	Activity	Resources
2:00 - 2:30	Counterfeiting: Introduction and instrumentation	Printed handout
2:30 - 4:00	Practical: Analysis of handwriting sample	

Content: Crime scene investigation
Date and time: Week 6, Wednesday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: questioned document examination
3:00 - 4:00	Quiz and discussion

Content: Forensic Ballistics
Date and time: Week 6, Thursday, 2:00PM to 4:00PM
Topic: Introduction to forensic ballistics
Learning outcomes:

- Able to understand the concept of ballistics
- Able to know the forensic significance and factors affecting forensic ballistics

Time	Activity	Resources
2:00 - 2:30	Ballistics : definition and types	Printed handout
2:30 - 3:00	Need and scope of forensic ballistics	Printed handout
3:00 - 3:30	Factors affecting forensic ballistics and case studies	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Ballistics
Date and time: Week 6, Friday, 2:00PM to 4:00PM
Topic: Components of ballistics
Learning outcomes:

- Able to understand the concept of firearm and ammunition
- Able to know the various types of firearms and ammunition

Time	Activity	Resources
2:00 - 2:30	Components of ballistics: firearms, ammunition, target	Printed handout
2:30 - 3:00	Firearm : definition and types (smooth bore and rifled bore), parts of firearm	Printed handout
3:00 - 3:30	Ammunition: definition, types and its parts	Printed handout

3:30-4:00	Group discussion	

Content: Forensic Ballistics
Date and time: Week 6, Saturday, 2:00PM to 4:00PM
Topic: Examination of firearm
Learning outcomes:

- Able to understand the principle and comparative characteristics of firearms
- Able to know the forensic significance of firearm identification

Time	Activity	Resources
2:00 - 2:30	Basic principle for identification and individualization of firearms, types of various firearms used in crimes	Printed handout
2:30 - 3:00	Class and individual characteristics, range of firing	Printed handout
3:00 - 3:30	Examination of firearm: fingerprint recovery, serial number recovery, magnetic particle inspection, chemical restoration	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Ballistics
Date and time: Week 7, Monday, 2:00PM to 4:00PM
Topic: Examination of cartridges
Learning outcomes:

- Able to understand the concept of cartridge
- Able to know various marking used for examination of cartridges

Time	Activity	Resources
2:00 - 2:30	Cartridge: definition, types and forensic significance of cartridge examination	Printed handout
2:30 - 3:00	Firearm generated markings on cartridge cases: 1. striated action marks (shear marks, firing pin marks, extractor marks, ejector marks)	Printed handout
3:00 - 3:30	2. Impressed action marks (firing pin impressions, breech face marks)	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Ballistics

Date and time: Week 7, Tuesday, 2:00PM to 4:00PM
Topic: Bullet identification
Learning outcomes:

- Able to understand the concept of bullets
- Able to understand comparative analysis for bullets

Time	Activity	Resources
2:00 - 2:30	Bullet: Definition, types and importance	Printed handout
2:30 - 3:00	Bullet: Class and individual characteristics, rifling marks	Printed handout
3:00 - 3:30	Comparative analysis of bullets	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Ballistics
Date and time: Week 7, Wednesday, 2:00PM to 4:00PM
Topic : Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Forensic Ballistics
3:00 - 4:00	Quiz and discussion

Content: Forensic Marks
Date and time: Week 7, Thursday, 2:00PM to 4:00PM
Topic: Tool marks
Learning outcomes:

- Able to understand the concept of tool marks
- Able to know the forensic significance of tool marks

Time	Activity	Resources
2:00 - 2:30	Tool marks: Definition and types(indentation, abrasion and cutting)	Printed handout
2:30 - 3:00	Tool marks: Types of cases, location, collection, packaging	Printed handout
3:00 - 3:30	Analysis of tool marks and their forensic significance	Printed handout

3:30-4:00	Group discussion	

Content: Forensic Marks
Date and time: Week 7, Friday, 2:00PM to 4:00PM
Topic: Tyre marks
Learning outcomes:

- Able to understand the concept of tyre marks
- Able to know the forensic significance of tyre marks

Time	Activity	Resources
2:00 - 2:30	Tyre marks: Definition, anatomy of tyre marks, identifying vehicle using tyre mark	Printed handout
2:30 - 3:00	Tyre marks: Types of cases, location, evidence collection, determining movement from tyre marks in vehicular accidental cases	Printed handout
3:00 - 3:30	Types of tyre marks (skid marks, accelerating marks, decelerating marks), forensic significance of tyre marks	Printed handout
3:30-4:00	Group discussion	

Content: forensic marks
Date and time: Week 7, Saturday, 2:00PM to 4:00PM
Topic: Footprints (shoe prints)
Learning outcomes:

- Able to understand the concept of footprints
- Able to know the forensic significance of footprints

Time	Activity	Resources
2:00 - 2:30	Forensic footwear evidence: Introduction, forms of footwear impressions (3D impressions, 2D impressions)	Printed handout
2:30 - 3:00	Information from footwear impressions, steps of footwear evidence collection	Printed handout
3:00 - 3:30	Location and recovery of footwear impressions, examination and forensic significance	Printed handout

3:30-4:00	Group discussion	

Content: Forensic Marks
Date and time: Week 8, Monday, 2:00PM to 4:00PM
Topic: Lip prints (cheiloscopy)
Learning outcomes:

- Able to understand the concept of cheiloscopy
- Able to know the forensic significance of lip prints

Time	Activity	Resources
2:00 - 2:30	Lip prints: introduction, brief history, anatomy and morphology, classification	Printed handout
2:30 - 3:00	Types of lip prints found on the crime scene, searching of prints, development and lifting of lip prints	Printed handout
3:00 - 3:30	Collection of lip prints from suspect, examination and comparison, forensic significance	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Marks
Date and time: Week 8, Tuesday, 2:00PM to 4:00PM
Topic: Case studies
Learning outcomes:

- Able to understand the application of various prints in real crime cases

Time	Activity	Resources
2:00 - 2:30	Discuss about forensic significance of toolmarks with the help of Case study	Printed handout
2:30 - 3:00	Discuss about forensic significance of tyremarks with the help of Case study	Printed handout
3:00 - 3:30	Discuss about forensic significance of shoeprints with the help of Case study	Printed handout
3:30-4:00	Discuss about forensic significance of lip prints with the help of Case study	Printed handout

Content: Forensic Marks
Date and time: Week 8, Wednesday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Forensic marks
3:00 - 4:00	Quiz and discussion

Content: Physical evidence: Types, handling and analysis
Date and time: Week 8, Thursday, 2:00PM to 4:00PM
Topic: Introduction
Learning outcomes:

- Able to understand the concept of physical evidence and their forensic significance..

Time	Activity	Resources
2:00 - 2:30	Evidence: definition and categories (testimonial, documentary, demonstrative and physical)	Printed handout
2:30 - 3:00	Crime scene integrity and contamination of evidence (value of evidence)	Printed handout
3:00 - 3:30	Significance of physical evidences	Printed handout
3:30-4:00	Group discussion	

Content: Physical evidence: Types, handling and analysis
Date and time: Week 8, Friday, 2:00PM to 4:00PM
Topic: Types of physical evidences
Learning outcomes:

- Able to understand the various types of physical evidence and their importance in forensic science.

Time	Activity	Resources
2:00 - 2:30	Types of physical evidences ● Fingerprints: location, types of cases, collection,analysis and forensic significance	Printed handout
2:30 - 3:00	● Voice prints and language analysis: Location, types	Printed handout

	of cases, collection,analysis and forensic significance ● Human DNA profiling	
3:00 - 3:30	● Blood: location, types of cases, collection,analysis and forensic significance ● Semen: location, types of cases, collection,analysis and forensic significance ● Vomit: location, types of cases, collection,analysis and forensic significance ● Saliva: location, types of cases, collection,analysis and forensic significance	Printed handout
3:30-4:00	Group discussion	

Content: Physical evidence: Types, handling and analysis
Date and time: Week 8, Saturday, 2:00PM to 4:00PM
Topic: Types of physical evidences
Learning outcomes:

- Able to understand the various types of physical evidence and their importance in forensic science.

Time	Activity	Resources
2:00 - 2:30	Types of physical evidences ● Hairs and fibres: location, types of cases, collection,analysis and forensic significance ● Diatoms and pollen grains: location, types of cases, collection,analysis and forensic significance	Printed handout
2:30 - 3:00	● Shoe prints, tyre prints and other impressions : location, types of cases, collection,analysis and forensic significance ● Tools and tool marks: location, types of cases, collection,analysis and forensic significance	Printed handout
3:00 - 3:30	● Firearms and ammunition: location, types of cases, collection,analysis and forensic significance ● Semen: location, types of cases, collection,analysis and forensic significance ● Vomit: location, types of cases, collection,analysis	Printed handout

	and forensic significance	
3:30-4:00	Group discussion	

Content: Physical evidence: Types, handling and analysis
Date and time: Week 9, Monday, 2:00PM to 4:00PM
Topic: Types of physical evidences
Learning outcomes:

- Able to understand the various types of physical evidence and their importance in forensic science.

Time	Activity	Resources
2:00 - 2:30	Types of physical evidences ● Glass: location, types of cases, collection,analysis and forensic significance ● Soils and minerals: location, types of cases, collection,analysis and forensic significance ● Wood: location, types of cases, collection,analysis and forensic significance	Printed handout
2:30 - 3:00	● Drugs: location, types of cases, collection,analysis and forensic significance ● Weapons of mass destruction: location, types of cases, collection,analysis and forensic significance ● Skeletal remains: location, types of cases, collection,analysis and forensic significance	Printed handout
3:00 - 3:30	● Documents: location, types of cases, collection,analysis and forensic significance ● Digital evidence: location, types of cases, collection,analysis and forensic significance ● Paint: location, types of cases, collection,analysis and forensic significance	Printed handout
3:30-4:00	Group discussion	

Content: Physical evidence: Types, handling and analysis
Date and time: Week 9, Tuesday, 2:00PM to 4:00PM
Topic: Processing of physical evidences

Learning outcomes:

- Able to understand the various procedure of processing physical evidences

Time	Activity	Resources
2:00 - 2:30	Processing evidence: Maintaining the chain of custody from discovery to disposal ● Recognizing evidence ● Marking, identifying and collecting evidence	Printed handout
2:30 - 3:00	● Packaging and preserving evidence ● Transporting evidence ● Protecting,storing and managing evidence	Printed handout
3:00 - 3:30	● Exhibiting evidence in court ● Precautions for evidence handling	Printed handout
3:30-4:00	Group discussion	

Content: Physical evidence: Types, handling and analysis
Date and time: Week 9, Wednesday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Physical evidence: Types, handling and analysis
3:00 - 4:00	Quiz and discussion

Content: Forensic Fingerprints
Date and time: Week 9, Thursday, 2:00PM to 4:00PM
Topic: Introduction and brief history
Learning outcomes:

- Able to understand the concept of fingerprints and their anatomy

Time	Activity	Resources
2:00 - 2:30	Introduction to forensic fingerprints	Printed handout
2:30 - 3:00	Brief history of fingerprints	Printed handout

3:00 - 3:30	Anatomy of fingerprints, and discuss how fingerprints are produced	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Fingerprints
Date and time: Week 9, Friday, 2:00PM to 4:00PM
Topic: Classification of fingerprints
Learning outcomes:

- Able to understand the concept of fingerprints and their anatomy

Time	Activity	Resources
2:00 - 2:30	Fingerprint patterns : loop, whorl, arch	Printed handout
2:30 - 3:30	Classification of fingerprints : ● Henry classification system	Printed handout
3:00 - 3:30	● Ridge classification	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Fingerprints
Date and time: Week 9, Saturday, 2:00PM to 4:00PM
Topic: Detection and development of fingerprints
Learning outcomes:

- Able to understand the various methods used for development of latent fingerprints

Time	Activity	Resources
2:00 - 2:30	Methods of development of latent fingerprints : ● Physical methods (dusting and lifting)	Printed handout
2:30 - 3:00	● Chemical methods (iodine fuming, ninhydrin, cyanoacrylate fuming, silver nitrate)	Printed handout
3:00 - 3:30	● Other methods : special techniques for capturing prints from skin,clothing or or other difficult surfaces	Printed handout

3:30-4:00	Group discussion	

Content: Forensic Fingerprints
Date and time: Week 9, Monday, 2:00PM to 4:00PM
Topic: Collection and analysis of fingerprints
Learning outcomes:

- Able to understand the fingerprints analysis process

Time	Activity	Resources
2:00 - 2:30	Fingerprint collection : types of cases, places where fingerprints are found in most cases, preservation	Printed handout
2:30 - 3:00	The fingerprint analysis process: ● Analysis ● Comparisons ● Evaluation ● verification	Printed handout
3:00 - 3:30	Finger identification : ● Automated fingerprint identification system (AFIS)	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Fingerprints
Date and time: Week 10, Tuesday, 2:00PM to 4:00PM
Topic: Forensic significance and practical
Learning outcomes:

- Able to understand applications of forensic fingerprints
- Able to classify fingerprints

Time	Activity	Resources
2:00 - 2:30	Applications of fingerprint identification in context to forensic science	Printed handout
2:30 - 4:00	Practical based on classification of fingerprints	

Content: Forensic Fingerprints
Date and time: Week 10, Wednesday, 2:00PM to 4:00PM

Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Forensic fingerprints
3:00 - 4:00	Quiz and discussion

Content: Forensic medicine: An aid to criminal investigation
Date and time: Week 10, Thuruday, 2:00PM to 4:00PM
Topic: Introduction to forensic medicine
Learning outcomes:

- Able to understand the what is forensic medicine and its branches

Time	Activity	Resources
2:00 - 2:30	Forensic medicine: Definition Medical jurisprudence	Printed handout
2:30 - 3:00	Branches of forensic medicine ● Forensic pathology ● Clinical forensic medicine ● Forensic thanatology ● Medical ethics	Printed handout
3:00 - 3:30	● Forensic anthropology ● Forensic odontology ● Forensic psychiatry ● Forensic entomology ● Forensic serology	Printed handout
3:30-4:00	Group discussion	

Content: Forensic medicine: An aid to criminal investigation
Date and time: Week 10, Friday, 2:00PM to 4:00PM
Topic: Medico-legal deaths
Learning outcomes:

- Able to understand the concept of medico-legal death and its forensic significance
- Able to know the significance of injuries in solving crime

Time	Activity	Resources

2:00 - 2:30	Death: Definition, types, causes and manner of death	Printed handout
2:30 - 3:00	Estimation of time since death : postmortem changes ● Temperature ● Rigor mortis ● Livor mortis Role of forensic pathologist	Printed handout
3:00 - 3:30	Injuries: Definition, types (fatal, defence and self inflicted) Interpretation of injuries and their forensic significance	Printed handout
3:30-4:00	Group discussion	

Content: Forensic medicine: An aid to criminal investigation
Date and time: Week 10, Saturday, 2:00PM to 4:00PM
Topic: Poisons
Learning outcomes:

- Able to understand the concept and significance of poisons

Time	Activity	Resources
2:00 - 2:30	Poison : definition Classification of poisons : 1. Based to kingdom ● Animal : cantharides ● Vegetable : strychnine ● Mineral : HCL	Printed handout
2:30 - 3:00	2. Based on chemical properties ● Inorganic poison : bromine, iodine ● Organic poison : alcohol, chloroform ● Animal poison : snake venom 3. Based on psychological action : ● corrosives ● irritants ● Narcotics ● Neurotics ● Depressants ● Tetanics ● exhautives	Printed handout

3:00 - 3:30	Types of poisoning : 1. From medical point of view ● Acute poisoning ● Sub-acute poisoning ● Chronic poisoning 2. From legal point of view ● Accidental poisoning ● Suicidal ● Homicidal ● undetermined	Printed handout
3:30-4:00	Group discussion	

Content: Forensic medicine: An aid to criminal investigation
Date and time: Week 11, Monday, 2:00PM to 4:00PM
Topic: Forensic serology
Learning outcomes:

- Able to understand the working of forensic serology division

Time	Activity	Resources
2:00 - 2:30	Forensic serology : definition , composition of blood and blood typing	Printed handout
2:30 - 3:00	● Characterization of unknown blood ● Stain patterns for crime reconstruction ● Paternity testing	Printed handout
3:00 - 3:30	● Semen identification in rape cases ● DNA techniques used for identification	Printed handout
3:30-4:00	Group discussion	

Content: Forensic medicine: An aid to criminal investigation
Date and time: Week 11, Tuesday, 2:00PM to 4:00PM
Topic: Forensic Entomology
Learning outcomes:

- Able to understand the forensic importance of entomology

Time	Activity	Resources

2:00 - 2:30	Forensic Entomology: Definition , role of forensic entomologist in death investigations	Printed handout
2:30 - 3:00	Cadaver : stages of decomposition ● Fresh stage ● Bloated stage ● Decay stage ● Post-decay stage ● Dry stage Life cycle of blow flies	Printed handout
3:00 - 3:30	Determining PMI, effect of temperature, forensic importance	Printed handout
3:30-4:00	Group discussion	

Content: Forensic medicine: An aid to criminal investigation
Date and time: Week 11, Wednesday, 2:00PM to 4:00PM
Topic: Forensic Asphyxia
Learning outcomes:

- Able to understand the concept of death because of asphyxia
- Able to differentiate whether death is suicidal or homicidal

Time	Activity	Resources
2:00 - 2:30	Asphyxia: Definition, signs and symptoms	Printed handout
2:30 - 3:00	Classification of asphyxia ● suffocation ● drowning ● Chemical ● sexual	Printed handout
3:00 - 3:30	● Hanging ● strangulation	Printed handout
3:30-4:00	Group discussion	

Content: Forensic medicine: An aid to criminal investigation
Date and time: Week 10, Thursday, 2:00PM to 4:00PM

Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Forensic medicine: An aid to criminal investigation
3:00 - 4:00	Quiz and discussion

Content: Forensic Anthropology and Odontology
Date and time: Week 11, Friday, 2:00PM to 4:00PM
Topic: Forensic Anthropology
Learning outcomes:

- Able to understand the concept of forensic anthropology
- Able to know the role of forensic anthropologist at crime scene

Time	Activity	Resources
2:00 - 2:30	Anthropology: Definition and brief history	Printed handout
2:30 - 3:00	Physical Anthropology and human variability ● Osteology (skeletal biology) ● Odontology (dental biology)	Printed handout
3:00 - 3:30	Role of Forensic Anthropologist	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 11, Saturday, 2:00PM to 4:00PM
Topic: Crime scene processing in cases involving skeletal remains
Learning outcomes:

- Able to know the processing of crime scenes where skeletal remains are found.

Time	Activity	Resources
2:00 - 2:30	Scene processing ● On site identification	Printed handout
2:30 - 3:00	● Identification using buried remains	Printed handout

3:00 - 3:30	Discuss forensic significance of physical anthropology using case study	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 11, Saturday, 2:00PM to 4:00PM
Topic: Crime scene processing in cases involving skeletal remains
Learning outcomes:

- Able to know the processing of crime scenes where skeletal remains are found.

Time	Activity	Resources
2:00 - 2:30	Scene processing ● On site identification ● Identification using buried remains	Printed handout
2:30 - 3:00	Identification using skeletal remains ● Estimation of age ● Determination of sex ● Determination of race	Printed handout
3:00 - 3:30	Discuss forensic significance of physical anthropology using case study	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 12, Monday, 2:00PM to 4:00PM
Topic: Estimation of age and height using long bones
Learning outcomes:

- Able to know how to estimate age using long bones
- Able to know how to estimate height using long bones

Time	Activity	Resources
2:00 - 2:30	Estimation of age using long bones ● Humerus ● Radius ● ulna	Printed handout
2:30 - 3:00	● Femur	Printed handout

	• Tibia • fibula	
3:00 - 3:30	Estimation of height using long bones	Printed handout
3:30-4:00	Group discussion	

Date and time: Week 12, Tuesday, 2:00PM to 4:00PM
Topic: Estimation of age using skull
Learning outcomes:

- Able to know how to estimate age using skull

Time	Activity	Resources
2:00 - 2:30	Estimation of age using skull: Sutures • What are skull sutures • Types of skull sutures	Printed handout
2:30 - 3:30	How to estimate age using skull sutures	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 12, Wednesday, 2:00PM to 4:00PM
Topic: Sex detmination using skull
Learning outcomes:

- Able to know how to determine sex using skull

Time	Activity	Resources
2:00 - 2:30	Sex determination using skull: Features differentiating male and female skulls	Printed handout
2:30 - 3:30	Features differentiating male and female skulls	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 12, Thursday, 2:00PM to 4:00PM
Topic: Sex detmination using pelvis and long bones
Learning outcomes:

- Able to know how to determine sex using pelvis and long bones

Time	Activity	Resources
2:00 - 3:10	Sex determination using pelvis : features differentiating male and female pelvis	Printed handout
3:10 - 3:30	Features differentiating male and female long bones	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 12, Friday, 2:00PM to 4:00PM
Topic: Race determination using skull, long bones and pelvis
Learning outcomes:

- Able to know how to determine race using pelvis, long bones and skull

Time	Activity	Resources
2:00 - 2:30	Race determination using pelvis	Printed handout
2:30 - 3:00	Race determination using pelvis	Printed handout
3:00 - 3:30	Race determination using pelvis	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 12, Saturday, 2:00PM to 4:00PM
Topic: Forensic Odontology: Introduction
Learning outcomes:

- Able to understand the need and scope of odontology in forensic science

Time	Activity	Resources
2:00 - 2:30	Forensic Odontology: Definition, need and scope	Printed handout
2:30 - 3:00	Role and duties of forensic odontologist in investigation to help law	Printed handout

3:00 - 3:30	Brief history of forensic odontology	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 13, Monday, 2:00PM to 4:00PM
Topic: Forensic identification using tooth structure
Learning outcomes:

- Able to know how to estimate age using tooth structure
- Able to know how to determine sex and race using tooth structure

Time	Activity	Resources
2:00 - 2:30	Tooth: Anatomy and morphology	Printed handout
2:30 - 3:00	Forensic odontology: Estimation of age	Printed handout
3:00 - 3:30	Forensic odontology: Determination of race and sex	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 13, Tuesday, 2:00PM to 4:00PM
Topic: Forensic bite marks
Learning outcomes:

- Able to understand the concept of bite marks
- Able to know how to collect, preserve and analyse bite mark evidence

Time	Activity	Resources
2:00 - 2:30	Bite marks: ● Definition ● Types ● Forensic significance and evidential value	Printed handout
2:30 - 3:00	Collection of bite marks : ● Collection from living ● Collection from dead	Printed handout
3:00 - 3:30	● Preservation and analysis of bite marks ● Comparative analysis	Printed handout

3:30-4:00	Group discussion	

Content: Forensic Anthropology and Odontology
Date and time: Week 13, Wednesday, 2:00PM to 4:00PM
Topic: Practical: Sex determination using pelvis and skull
Learning outcomes:

- Able to differentiate male and female skull
- Able to differentiate male and female pelvis

Time	Activity	Resources
2:00 - 3:00	Practical: Differentiate given male and female skull	
3:00 - 4:00	Practical: Differentiate given male and female pelvis	

Content: Forensic Anthropology and Odontology
Date and time: Week 10, Thursday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Forensic anthropology and odontology
3:00 - 4:00	Quiz and discussion

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 13, Friday, 2:00PM to 4:00PM
Topic: Introduction to forensic psychology
Learning outcomes:

- Able to understand the concept of forensic psychology
- Able to know the need and scope of forensic psychology

Time	Activity	Resources
2:00 - 2:30	Forensic psychology: Definition and brief history	Printed handout
2:30 - 3:00	Need and scope of forensic psychology	Printed handout

3:00 - 3:30	Role and duties of forensic psychologist	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 13, Saturday, 2:00PM to 4:00PM
Topic: Polygraph: Introduction
Learning outcomes:

- Able to understand the concept of polygraph (lie detector)
- Able to know the need and scope of polygraph

Time	Activity	Resources
2:00 - 2:30	Polygraph: Introduction and history	Printed handout
2:30 - 3:00	Need and scope of polygraph test, scientific principle of polygraph	Printed handout
3:00 - 3:30	Polygraph: psycho-biological test ● Psychological aspect of polygraph ● Biological aspect of polygraph	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 13, Monday, 2:00PM to 4:00PM
Topic: Polygraph: Instrumentation
Learning outcomes:

- Able to understand the objectives of polygraph (lie detector) test
- Able to answer what is polygraph instrument

Time	Activity	Resources
2:00 - 2:30	Objectives of polygraph test	Printed handout
2:30 - 3:00	Polygraph instrumentation ● Pneumograph tube ● Sphygmomanometer ● Galvanometer	Printed handout

	• plethysmograph	
3:00 - 3:30	Working	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 14, Tuesday, 2:00PM to 4:00PM
Topic: Polygraph procedure
Learning outcomes:

- Able to understand the procedure of polygraph (lie detector) test
- Able to know the legal aspects of polygraph in India

Time	Activity	Resources
2:00 - 2:30	Procedure of conducting polygraph: Requirements	Printed handout
2:30 - 3:00	Questionnaire preparation: • Relevant questions • Irrelevant questions • control Analysis of polygraph charts	Printed handout
3:00 - 3:30	Legal aspects of polygraph in India (article 20(3)) and its limitations	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 14, Wednesday, 2:00PM to 4:00PM
Topic: Narco-test: Introduction
Learning outcomes:

- Able to understand narco test and its importance

Time	Activity	Resources
2:00 - 2:30	Narco-test: Introduction	Printed handout

2:30 - 3:00	Brief history of Narco-test Narco-analysis in India	Printed handout
3:00 - 3:30	Need and scope of Narco-test	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 14, Thursday, 2:00PM to 4:00PM
Topic: Principle and objectives of Narco test
Learning outcomes:

- Able to understand the principle and objectives of narco test

Time	Activity	Resources
2:00 - 2:30	Objectives of Narco-analysis	Printed handout
2:30 - 3:00	Principle of Narco-analysis	Printed handout
3:00 - 3:30	Requirement: Operation theatre and team of experts ● Clinical forensic psychologist ● Physician ● Psychiatrist ● Anesthetist ● Audio-videographer ● writer	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 14, Friday, 2:00PM to 4:00PM
Topic: Narco-test procedure
Learning outcomes:

- Able to understand the procedure of Narco-analysis
- Able to know the legal aspects of Narco-analysis in India

Time	Activity	Resources
2:00 - 2:30	Procedure of conducting Narco-analysis ● Pre-test interview	Printed handout

	• Pre-narcotic state • Semi-narcotic state • Post-test interview	
2:30 - 3:00	Questionnaire preparation: • Relevant questions • Irrelevant questions • control Analysis of Narco test Discuss issues related to this test	Printed handout
3:00 - 3:30	Legal aspects of narco-analysis in India (article 20(3)) and its limitations	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 14, Saturday, 2:00PM to 4:00PM
Topic: BEOS: Introduction
Learning outcomes:

- Able to understand what is BEOS and its basic principle

Time	Activity	Resources
2:00 - 2:30	BEOS(Brain electrical oscillation signature profiling) : introduction and invention (India)	Printed handout
2:30 - 3:00	Concept: knowing and remembrance	Printed handout
3:00 - 3:30	Basic principle of BEOS, need and scope of BEOS	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 15, Monday, 2:00PM to 4:00PM
Topic: BEOS: Working
Learning outcomes:

- Able to understand the working of BEOS
- Able to know the objectives of BEOS

Time	Activity	Resources

2:00 - 2:30	Working of BEOS: ● Brain signature ● Electrical oscillation P300	Printed handout
2:30 - 3:00	Probes used in BEOS: ● Auditory probes ● Visual probes	Printed handout
3:00 - 3:30	Objectives of BEOS technique	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 15, Tuesday, 2:00PM to 4:00PM
Topic: BEOS procedure
Learning outcomes:

- Able to understand the procedure of BEOS
- Able to know the legal aspects of BEOS in India

Time	Activity	Resources
2:00 - 2:30	Procedure of conducting BEOS: Requirements ● Consent ● Interview with IO ● BEOS system ● The examiner	Printed handout
2:30 - 3:00	● The examinee ● BEOS examination rooms ● privacy Analysis of BEOS test	Printed handout
3:00 - 3:30	Legal aspects of narco-analysis in India (article 20(3)) and its advantages over other techniques	Printed handout
3:30-4:00	Group discussion	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS

Date and time: Week 15, Wednesday, 2:00PM to 4:00PM
Topic: Case studies
Learning outcomes:

- Able to understand the advantages and disadvantages of polygraph, Narco-analysis and BEOS

Time	Activity	Resources
2:00 - 2:30	Advantages and disadvantages of polygraph, narco-analysis and BEOS	Printed handout
2:30 - 3:00	Discuss case studies where polygraph is conducted	
3:00 - 3:30	Discuss case studies where narco-analysis is conducted	
3:30-4:00	Discuss case studies where BEOS is conducted	

Content: Forensic psychology: Polygraph, Narco-analysis and BEOS
Date and time: Week 15, Thursday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Forensic psychology: polygraph, Narco-analysis and BEOS
3:00 - 4:00	Quiz and discussion

Content: Forensic Biology: Blood stain analysis
Date and time: Week 15, Friday, 2:00PM to 4:00PM
Topic: Introduction to forensic biology
Learning outcomes:

- Able to know the importance of forensic biology in crime solving to help law

Time	Activity	Resources
2:00 - 2:30	Definition of forensic biology, need and scope of forensic biology	Printed handout
2:30 - 3:00	Brief history of forensic biology, subfields of forensic biology	Printed handout

3:00 - 3:30	Significance and applications of forensic biology	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Biology: Blood stain analysis
Date and time: Week 15, Saturday, 2:00PM to 4:00PM
Topic: Introduction to bloodstain pattern analysis
Learning outcomes:

- Able to know the importance of blood stains and patterns as biological evidence
- Able to know the principles of bloodstain pattern analysis

Time	Activity	Resources
2:00 - 2:30	Brief introduction on bloodstain pattern analysis	Printed handout
2:30 - 3:00	Brief history of bloodstain analysis, principle of blood stain analysis	Printed handout
3:00 - 3:30	Forensic significance of bloodstain pattern analysis and their evidential value inside courtroom	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Biology: Blood stain analysis
Date and time: Week 16, Monday, 2:00PM to 4:00PM
Topic: Procedure of bloodstain pattern analysis I
Learning outcomes :

- Able to understand the procedure of bloodstain pattern analysis
- Able to know types bloodstains found at crime scenes

Time	Activity	Resources
2:00 - 2:30	Procedure of bloodstain pattern analysis: ● Identification of stain/pattern ● Evidence of collection ● Documentation of bloodstain evidence	Printed handout
2:30 - 3:00	Blood stain: definition, types of blood stains ● Drip stain ● Drip trail	Printed handout

	● Parent stain ● Perimeter stain	
3:00 - 3:30	● Plama ● Platelet ● Pool ● Satellite stain ● Saturation stain ● Serum stain	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Biology: Blood stain analysis
Date and time: Week 16, Tuesday, 2:00PM to 4:00PM
Topic: Procedure of bloodstain pattern analysis II
Learning outcomes:

- Able to know types of bloodstains and patterns found at crime scenes

Time	Activity	Resources
2:00 - 2:30	Types of blood stains ● Spines ● Splash pattern ● Swipe pattern ● transfer stain ● Void	Printed handout
2:30 - 3:00	Blood pattern: definition and types ● Blood spatter pattern ● Blood clot ● Bubble ring ● Cast-off pattern ● Cessation cast-off pattern ● Swipe pattern ● Wipe pattern	Printed handout
3:00 - 3:30	● Drip pattern ● Edge characteristics ● Expiration pattern ● Flow pattern ● Forward spatter pattern	Printed handout

	● Impact pattern ● Mist pattern ● Projected pattern ● splash pattern	
3:30-4:00	Group discussion	

Content: Forensic Biology: Blood stain analysis
Date and time: Week 16, Wednesday, 2:00PM to 4:00PM
Topic: Analysis of bloodstain pattern
Learning outcomes

- Able to understand the analysis of bloodstain patterns.

Time	Activity	Resources
2:00 - 2:30	Analysis: ● Pattern analysis ● reconstruction	Printed handout
2:30 - 3:00	Information from Blood stain analysis ● Angle of impact ● Area of origin ● Area of convergence	Printed handout
3:00 - 3:30	Gunshot spatter analysis, sampling blood stain for DNA profiling	Printed handout
3:30-4:00	Group discussion	

Content: Forensic Biology: Blood stain analysis
Date and time: Week 16, Thursday, 2:00PM to 4:00PM
Topic: Quiz and assessment

Time	Activity
2:00 - 3:00	Assessment of the topic: Forensic biology: Blood stain analysis
3:00 - 4:00	Quiz and discussion

Content: Mock crime scene investigation
Date and time: Week 16, Friday, 2:00PM to 4:00PM
Topic: Practical: How to identify and secure crime scene

Time	Activity
2:00 - 4:00	Practical: How to identify and secure crime scene

Content: Mock crime scene investigation
Date and time: Week 16, Saturday, 2:00PM to 4:00PM
Topic: Practical: Crime scene photography

Time	Activity
2:00 - 4:00	Practical: crime scene photography

Content: Mock crime scene investigation
Date and time: Week 17, Monday, 2:00PM to 4:00PM
Topic: Practical: Crime scene sketching and searching patterns used for finding evidences

Time	Activity
2:00 - 4:00	Practical: crime scene sketching and searching patterns used for finding evidences

Content: Mock crime scene investigation
Date and time: Week 17, Tuesday, 2:00PM to 4:00PM
Topic: Practical: How to identify, develop and collect fingerprints at crime scene

Time	Activity
2:00 - 4:00	Practical: How to identify, develop and collect fingerprints at crime scene

Content: Mock crime scene investigation
Date and time: Week 17, Wednesday, 2:00PM to 4:00PM
Topic: Practical: How to identify and collect physical evidences at crime scene

Time	Activity

2:00 - 4:00	Practical: How to identify and collect physical evidences at crime scene

Content: Mock crime scene investigation
Date and time: Week 17, Thursday, 2:00PM to 4:00PM
Topic: practical: Preservation and packaging of evidences and maintenance of chain of custody

Time	Activity
2:00 - 4:00	Practical: Preservation and packaging of evidences and maintenance of chain of custody

Evaluation Scheme:

Continuous Assessment after every topic: Quiz and Practice base,
Presentation and Viva voce