Semester -3

BRANCH	SubjectTitle	SubjectCode
B.Sc.(ForensicScience–Major)	QuestionedDocuments&ComputerForensic	FSM1-131

Course Learning outcome(CLO)

LearningObjectives

a. Questioneddocumentsanditstypes.
b. Tools and techniques used for the examination of questioned documents.
c. Identification of different types of written documents and to detect forgery in written and printed document.
d. Togetanideaofcomputer, hardware andsoftware, networking, interfaces, etc.
e. Investigation of cybercrime, security issues, crime on internet, hacking and computer viruses.

Aftersuccessfully completing thecourse,student will beableto join police service, private detective or security agency or start his/her own investigative agency

Unit –I

NatureandScopeofQuestionedDocuments:
Definitionofquestioneddocument, types of questioned document, preliminary examination of questioned document. basic tools needed for forensic document examination-ultraviolet,visible,infrared,andfluorescencespectroscopy, photomicrography, microphotography, video spectral comparator, electrostatic detection apparatus. determining the age and relative ageof documents, GovernmentExaminer of Questioned Document (GEQD).

Unit–II

ComparisonofQuestionedDocuments:
Comparisonofhandwriting,developmentofindividualityinhandwriting,naturalvariationsand fundamental divergences in handwriting, class & individual characteristics.Merits and demerits of exemplarandnon-exemplar samples during comparison of handwriting.standards for comparison o1 handwriting. Comparison of paper, ink, printed documents, typed documents, Xeroxed documents.

Unit -III

Forgeries:
Alterations in documents, includingerasures, additions,over- writing, and obliterations. indented and invisible writings. Charred documents, Examination ofcounterfeit currency notes, Passports, VISA and stamp pads.

Unit–IV

Computer ForensicsPart–I

I:Basicintroductiontocomputers,

hardware and accessories, operating system and software. Computers and networking: concept of network security and cyber crime investigation. Basic of security planning: multi layered security, intrusion triangle, removing intrusion opportunities, importance of physical security, protecting server, workstation and network devices, protection of removable storage disks.

Unit- V

ComputerForensicsPart-II:

Cybercrime, crimes on internet, hacking, virus, worms, cookies, obscenity and pornography. Programme manipulation. Software piracy, intellectual property and computer security.Encryption and decryption methods.Cryptography and steganography. Relevant section of Information technology Act 2000

Practicals -

I. Examination of various ink samples using planer chromatographic techniques.
2. Decipherment of secret, .erased, obliterated, indented hand writing using physical/chemical methods.
3 Study of handwriting on different surfaces.
4. Handling and preserving of charred documents.
5. Matching of hand writing and signatures (genuine/forged).
6. Examination of type written and printer generated prints.
7. Introduction of computer, accessories & operating systems
8. Collection and handling of digital evidences.
9. Network analysis for security purposes.
10. Study of computer forensics and cybercrime investigations being used by developed Nations like USA, UK and comparison with India.
11. Securing a windows server network
12. Analysis of external device

Semester-4

BRANCH	SubjectTitle	SubjectCode
B.Sc.(ForensicScience–Major)	Fingerprints,Biometrics&Anthropometry	FSM1-141

CourseLearningoutcomes(CLO)

a. LearningObjectives:Howfingerprintscanbeusedforpersonnelandcriminal identification.
b. Differentmethod usedforexaminationoffingerprints.
c. Utilizationofface,ear,irisandretinainbiometricanalysis.
d. Study of human skeleton, personal identification, use of facial features for identification.
e. Useofbitemarksandteethforpersonalidentification.

After successfully completing thecourse, student will beableto identify an individual through fingerprints, alert towardscheating and became more responsible, apart from that student can join privatedetective or security agency or start his/her own investigative agency

CONTENT

Unit -I

Finger Prints: History offinger print, formation of ridges, finger print patterns, ridge characteristics, ridge count, ridge tracing etc. Classification of finger print- primary, secondary, single digit, etc. Computerization of finger print and finger print bureau.

Unit–II

Examination of FingerPrints: Typesoffingerprint; latent, visibleand plastic prints, location of finger print, development of latent prints by physical and chemical methods. Photography of finger prints. Comparison of fingerprints.

Unit –III

BiometricsPart-I:

Ear Biometrics: Location and identification of ears in real time; uniqueness, permanence, universality and collectability, detection and recognition in existing 2D Images of ear; criminal identification. *Face Recognition:* Introduction, detection, representation and classification, some representation and classification techniques and their applications

Unit–IV

BiometricsPart-II:

Iris recognition: Introduction, anatomical and physiological underpinning, iris signature,representationand matching; localization, representation, matching. *Retinabiometrics:* Structureofeye;human retinaandstructure; unique pattern of blood vessels; retina pattern and identification

Unit- V

Forensic Anthropology:Anthropometry, elementary study of human skeleton, personal identification from bones, determination of age, sex, stature,reconstructionofskullandface.PersonalIdentification techniquesassomatoscopy,somatometery,osteometeryand craniometery.Bitemarks,collection,preservationandevaluationofbitemarks,photographyofbitemarks.Forensic odontology,typesof teeth, determination of age from teeth, eruption sequence, Gustafson's method,dentalanomalies,their significancein personalidentification.

Practicals -

1. To record fingerprint on 10 digit card
2. To identify the pattern and to perform pnmary and secondary classification
3. To Perform Ridge Tracing and Ridge Counting of the Fingerprints.
4. Identification of Ridge Characteristics of Fingerprint
5. Development of Latent Prints by Powder Method and Chemical Methods on Porous and Non-Porous Surfaces.
6. Lifting of Fingerprint by Different Methods.
7. Identification of Chance Prints Found on Different Surfaces.
8. To take palm and Lip Prints and their Examinations
9. To sketch the anatomical structure of human eye and its various structures for the_identification purposes.
10. Study of human long bones and relevant measurements for estimation of stature.
11. Estimation of age from skull, and determination of sex from skull and Pelvic measurements.

1. Toknowthebasicstepsofcrimescenemanagementfollowedbyaninvestigator

2. Preliminaryexaminationofarsonevidences

3. Preliminaryexaminationoftoxicologicalevidences.

4. reliminary examination of blood stains found on different surfaces like wall, glass, clothes and soiletc.

5. Preliminaryexaminationofevidences foundin case ofvitriolage