


UNIVERSITY OF MYSORE
Estd. 1916

Vishwavidyanilaya Karyasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/55/2024-25

Dated:20.07.2024

Notification

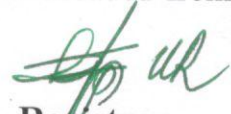
Sub:- Revised Syllabus and Scheme of Examinations of Criminology and Forensic Science (PG) programme (I & IV Semester) from the Academic year 2024-25.

- Ref:-**
1. Decision of Board of Studies in Criminology and Forensic Science (CB) meeting held on 11-06-2024.
 2. Decision of the Faculty of Science & Technology meeting held on 19-06-2024.
 3. Decision of the Academic Council meeting held on 28-06-2024.

The Board of Studies in Criminology and Forensic Science (CB) which met on 11-06-2024 has resolved to recommend & approved the revised Syllabus and Scheme of examinations of Criminology and Forensic Science (PG) programme (I & IV Semester) with effect from the Academic year 2024-25.

The Faculty of Science & Technology and Academic Council at their meetings held on 19-06-2024 and 28-06-2024 respectively has also approved the above said revised Syllabus and Scheme of examinations hence it is hereby notified.

The Syllabus and Scheme of Examinations content may be downloaded from the University Website i.e., www.uni-mysore.ac.in.


Registrar
Registrar
University of Mysore
Mysore

To:

1. The Registrar (Evaluation), University of Mysore, Mysuru.
2. The Chairman, BOS/DOS in Criminology and Forensic Science, Maharaja college, Mysore.
3. Dr. Nagaraja, Chairperson BOS (Composite) Criminology & Forensic Science, UOM, Associate Professor & HOD, GFGC & PG Centre, K.R Nagar.
4. The Dean, Faculty of Science & Technology, DOS in Mathematics, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
6. The Director, P.M.E.B, Manasagangothri, Mysore.
7. Director, College Development Council, Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
10. Office Copy.

Proceedings and
revision of syllabus in
Criminology and
Forensic Science (CB)



Department of Studies in Criminology and Forensic Science
Maharaja's College, Mysore 570 005

COURSE: M.Sc. in CRIMINOLOGY and FORENSIC SCIENCE
w.e.f. 2024-25

COURSE MATRIX
I SEMESTER M.Sc

Sl.No	Code	Title	Type	L	T	P	CREDITS
1	17201	Criminalistics	HC	4	0	0	4
2	17202	Forensic Medicine	HC	4	0	0	4
3		Practical in Criminalistics and Forensic Medicine	HC	0	1	3	4
4	17203	Theories of Criminology	SC*	4	0	0	4
5	17204	Criminal Justice System	SC*	4	0	0	4
6	17206	Crime Scene and Forensic Photography	SC*	4	0	0	4

* To select any Two from Soft Core Papers.

II SEMESTER M.Sc.

Sl.No	Code	Title	Type	L	T	P	CREDITS
1	17211	Forensic Prints and Impressions	HC	4	0	0	4
2	17212	Research Methodology and Statistical Methods	HC	4	0	0	4
3		Practical in Forensic Prints and Impressions	HC	0	1	3	4
4	17214	Criminal Major Acts	SC*	4	0	0	4
5	17213	Cyber Crime and Cyber Forensics	SC*	4	0	0	4
6	17206	Laboratory Quality Management and Standards	SC*	4	0	0	4
7	17215	Forensic Science	OE	4	0	0	4
8	17216	Forensic Medicine and Toxicology	OE	4	0	0	4

* To select any Two from Soft Core Papers.

III SEMESTER

Specialization 'A' CRIMINOLOGY

Sl.No	Code	Title	Type	L	T	P	CREDITS
1	17220	Correctional Administration	HC	4	0	0	4
2	17221	Techniques of Crime Investigation	HC	4	0	0	4
3		Practical Police Science	HC	0	1	3	4
4	17222	Police Administration	SC*	4	0	0	4
5	17223	Victimology	SC*	4	0	0	4
6		Forensic Anthropology	SC*	4	0	0	4
8	17224	Cyber Crime and Cyber Law	OE	4	0	0	4
9	17225	Police Organization	OE	4	0	0	4

*To Select any ONE from Soft Core.

Specialization 'B' FORENSIC SCIENCE

Sl.No	Code	Title	Type	L	T	P	CREDITS
1	17226	Forensic Science-I (Physical Sciences)	H C	3	0	1	4
2	17247	Forensic Science Instrumentation	H C	4	0	0	4
3	17228	Forensic Science-III (Biological Sciences)	H C	3	0	1	4
		Crime Scene Management	SC*	4	0	0	4
4	17229	Forensic Examination of Explosives	SC*	4	0	0	4
5	17230	Forensic Examination of Documents	SC*	4	0	0	4
6	17224	Cyber Crime and Cyber Law	OE	4	0	0	4
7	17225	Police Organization	OE	4	0	0	4

*To Select any ONE from Soft Core Papers

IV SEMESTER

Specialization 'A' CRIMINOLOGY

Sl.No	Code	Title	Type	L	T	P	CREDITS
1	17241	Security and Vigilance	H C	4	0	0	4
2		Term Work / Dissertation	H C	0	2	6	8
3	17242	Questioned Documents	SC*	4	0	0	4
4	17243	Corporate Crimes	SC*	4	0	0	4
5	17244	Forensic Psychology	SC*	4	0	0	4
6	17245	Law of Prints & Impressions	OE	4	0	0	4
7	17246	Victimology	OE	4	0	0	4

*To Choose any ONE from Soft Core.

Specialization 'B' FORENSIC SCIENCE

Sl.No	Code	Title	Type	L	T	P	CREDITS
1	17227	Forensic Science-II (Chemical Sciences)	H C	4	0	0	4
2		Term Work / Dissertation	H C	0	2	6	8
3	17248	Forensic Toxicology	SC*	4	0	0	4
		Forensic DNA Examination	SC*	4	0	0	4
4	17244	Forensic Psychology	SC*	4	0	0	4
5	17245	Law of Prints & Impressions	OE	4	0	0	4
6	17246	Victimology	OE	4	0	0	4

*To Choose any ONE from Soft Core Papers.

M.Sc. CRIMINOLOGY AND FORENSIC SCIENCE (C.B.C.S. SCHEME)

I SEMESTER

CRIMINALISTICS

HARD CORE (COMPULSORY PAPER)

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. Principles and branches of forensic science
- b. Forensic Ballistics, Explosives and Trace Evidence in the detection of crime.

Unit-1 [16 hours]

Principles of Criminalistics; Forensic Science Organizations: State and Directorate of Forensic Sciences and allied institutions; Branches/Divisions/Sections of Forensic Sciences Laboratory. Laws relating to expert evidence, with reference to Cr.P.C. and I.E.A; Frye, Daubert Standards and guidelines for expert testimony.

Unit-2 [16 hours]

Forensic Ballistics: Classification of firearms and ammunition. Components of Fire Arms. Identification of firearms, shooter and the range of firing and determination of trajectory.

Unit-3 [16 hours]

Explosives: Classification, investigation and laboratory identification. Investigation and detection of arson; fire accelerants and their detection.

Unit-4 [16 hours]

Trace evidences: Hair, Fiber, Fabric, Glass, Paints and Soil; its collection, examination and role in crime detection; Forensic detection of imitated and duplicated goods.

References:

1. Criminal investigation- J. Horson.
2. Criminalistics-An Introduction to Forensic Science- Safferstein, Richard M, (1990).
3. Crime investigation- Paul L Kirk – Edited by John I Thronton (1974).
4. Criminal investigation- Soderman and O’Connell.
5. Forensic Science in Investigation and Trails- Sharma B.R
6. Forensic Sciences- Eckert, William.
7. Code of Criminal Procedure. Rathanlal and Dhirajlal (2019).
8. Indian Evidence Act.-Avtar Singh, Rathanlal and Dhirajlal (2019).
9. Indian Evidence Act- Rathanlal and Dhirajlal
10. Fundamentals of Forensic Science, Houck, M.M & Siegel, J.A; Academic Press, London, 2006.
11. Techniques of Crime Scene Investigation, 7th Ed, Barry, A.J. Fisher; CRC Press, NewYork, 2003.
12. Forensic Science- An Introduction to Scientific and Investigative Techniques, James, S.H and Nordby, J.J; CRC Press, USA, 2003.
13. Advanced Technology in Forensic Investigation, Annama John Cosmo Books Thrissur (2019).

FORENSIC MEDICINE

HARD CORE PAPER (COMPULSORY PAPER)

4:0:0= 4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. The Meaning and Development, importance of Personal Identification.*
- b. The types of wounds, Death and changes after death.*
- c. The importance of ascertaining various body fluids, including the DNA Profiling.*

Unit-1 **[16 hours]**

Introduction to Forensic Medicine, Meaning and development of Forensic Medicine. Personal Identification of Living and dead and elementary study of Human Anatomy. Inquest – Police, Magistrate and Medical Examiner's Inquest.

Unit-2 **[16 hours]**

Mechanical Injuries – Meaning, Types and Medico-legal importance. Regional injuries and Transportation injuries. Thermal injuries - Meaning, Types - Burns, Electric Shock & Lightning.

Unit-3 **[16 hours]**

Death – Meaning, Mode of Death and changes after death.
Asphyxial death – Meaning and Types and Medico - legal importance of Asphyxial death.

Unit-4 **[16 hours]**

Body Fluids- Blood semen, Sweat, Saliva and Urine- Composition, Lab Tests & Medico- legal importance. D.N.A – Profiling- Collection of Sample, Lab Test- PCR Test, and Southern Blot Test.

Activities in addition to the regular Classes:

1. Observation of examination of accused and collection of evidentiary material of accused and victim of sexual offences;
2. Mortuary Visit: Witnessing post- mortem examination of cases of accidents, assault, hanging and poisoning;
3. Visit to scene of crime for reconstruction of events.

Note: all the above activities shall be done under the direct supervision of the faculty of Forensic Medicine.

Reference:

1. Text book of Forensic Medicine and Toxicology – Dr. Krishan Vij
2. Synopsis of Forensic medicine – Dr. KS Narayana Reddy Parikh's Medical Jurisprudence and toxicology.

PRACTICAL CRIMINALISTICS AND FORENSIC MEDICINE

HARD CORE (COMPULSORY PAPER)

0:0:4=4 CREDITS

1. Laboratory examination and identification of the species of Hair.
2. Examination of Glass Fractures for identification of direction of force.
3. Examination of genuine and counterfeit coins and currency notes.
4. Examination of soil to determine its origin by D.G Tube Method.
5. Visit to R F S L to know the uses of Forensic Instrumentation and report writing.
6. Identification and confirmatory tests for blood:
 - a. Presumptive tests.
 - b. Microcrystal tests.
 - c. Microscopic tests.
 - d. Spectroscopic tests
 - e. Blood grouping.
 - f. Precipitin Test
7. Visits to RFSL, Dept of Forensic medicine, Mortuary, Emergency and Burns ward and report writing.
8. Visit to D.N.A. Laboratory, Anthropological Survey of India and report writing.

SOFT CORE-To choose any Two Papers (Eight Credits)

THEORIES OF CRIMINOLOGY

SOFT CORE

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The importance of criminology.*
- b. The causes of criminal behavior.*
- c. The significance of criminal behavior on society.*

UNIT-1

[16 hours]

Introduction to formulation of theories:

Classical Theory – Cesar Beccaria, Jeremy Bentham ;

Psycho-Biological Perspectives: Biological-Italian School; Mental Deficiency-Henry H. Goddard; Emotional Disturbances Theory-William Healy; Psychoanalytical Theory-Sigmund Freud.

UNIT – 2

[16 hours]

Theory of Anomie-Emile Durkheim; Strain Theory-Robert Merton. Cultural Deviance Theory; Differential Association Theory-EH Sutherland; Cultural Conflict Theory- Thorston Sellin.

UNIT – 3

[16 hours]

Sub-Culture Theories: Albert Cohen's Theory of Sub-Culture;

Opportunity Theory- Cloward and Ohlin. Techniques of Neutralization-Sykes and Matza, Violence Theory- Marvin Wolfgang; Concerns Theory- Walter Miller

UNIT – 4

[16 hours]

Containment Theory-Walter Reckless; Labeling Theory Becker/Lemert

Theory of Social Control-Travis Hirschi; Routine Activity Theory- Cohen and Felson; Rational-Choice Perspective-Ronald Clarke and Derek Cornish. Multiple Causation Theory- Cyril Burt, George B. Vold.

References:

1. Criminology and Criminal Administration-Dr. S.S. Srivastava
2. Criminology-Adlter, Muller & Laufer-4ed.
3. Criminology Theories-Frank P. William III, Marilyn D. Mc Shane
4. Criminology-George B. Vold
5. Principles of Criminology-E.H. Sutherland & D.R. Cressey

CRIMINAL JUSTICE SYSTEM

SOFT CORE PAPER

4:0:0=4 CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The meaning and importance of criminal Justice System.*
- b. The various wings of the system and their role.*
- c. The importance of coordination of each to another.*

Unit-1: Introduction: [16 hours]
Meaning, purpose and relevance. Historical evolution-National and International.
Types of Justice Systems-Accusatorial and Inquisitorial.

Unit-2: Police and Prosecution System: [16 hours]
Police as an agency of Criminal Justice System. Role of Police in Modern Society. Meaning, purpose and organization of Prosecution System. Relationship between Police and Prosecution, need of co-ordination in Criminal Justice System.

Unit-3: Judiciary: [16 hours]
Meaning and importance of Judiciary. Organisation and features of Indian Judicial System- Supreme Court, High Courts and District Courts. Fundamentals of Judicial Functioning: Due Process, Speedy Trials and Fair Deal to victims of crime; Writ Provisions. Modernisation and reforms in Criminal Justice System.

Unit-4: Prison System [16 hours]
Meaning, Scope, Organisation and Objectives of Prison. U.N Standard Minimum Rules for Treatment of Prisoners and other standards, Covenants and Agreements. Human Rights in Prison System. Importance of Co-ordination between components of Criminal Justice System- Police, Prosecution, Judiciary and Prison system.

References:

1. Report of Commonwealth Secretariat 2002, Crime and Social Justice, London.
2. Crime and Criminal Justice System in India: Mehraj-Ud-Din Mir.
3. Criminology and Penology : Paranjape N.V.
4. Criminology and Criminal Administration: Sirohi J.P.S.
5. Criminology and Correctional Administration: Srivatsava S.S.
6. Criminology : Ram Ahuja.
7. Justice Malimath Committee Report on Criminal Justice Reforms.
8. Prison Reforms Committee Reports
9. Police Reforms Committee Reports.

CRIME SCENE AND FORENSIC PHOTOGRAPHY

SOFT CORE

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- The methods of securing, searching and documenting crime scenes.
- The art of Photographing and Video graphing different types of physical and trace evidence at crime scenes.
- The legal importance of Police Photography.
- The tools and techniques for analysis of different types of crime scene evidence by the use of digital photography.

Unit-1: Introduction to Photography

[16 hours]

History and Development of Photography. Basic principles and techniques of Black & White and colour photography, Photography in indoor and outdoor scene of crime; aerial photography, Aperture and focus adjustment. Significance of Photography in Forensic Science. Photo prints: Developing techniques and methods of photography, Different kinds of developers and fixers, modern developments in photography, linkage of cameras and film negatives.

Unit-2: Types of Camera and Photographic methods

[16 hours]

Introduction, Photographic instruments, fundamentals of light and vision, light source, geometry and photometry of image formation, types of camera, features, camera movement, and Optical filters. Specialized photography - UV, IR, transmitted light and side light photography, close-up, midrange and bird-eye view photography, trick photography, contact photography. Digital photography, software for digital photography, file formats for digital photographs – jpg, gif, bmp, tiff, mpeg, etc. Radiography, Photomicrography, microphotography, photography using scientific equipment, juxtapose charts and demonstrative photographs, photographs as secondary evidence, case studies.

Unit-3: Surveillance Photography

[16 hours]

Surveillance Photography: its methods, techniques and tactics. Surveillance photography – Cameras and accessions for surveillance photography moving surveillance on foot, 2- person foot surveillance moving, surveillance with vehicles, fixed surveillance, Use of photography in reconstructing the scene of crime and its presentation in the court of law. Image magnification, U.and I. R. illumination, Art factual evidences (Bloodstain, fingerprint, imprints, and micro evidences).

Unit-4: Digital Photography

[16 hours]

Digital photography, Digital Cameras and their Working Principle; basics of digital imaging. Digital watermarking and digital imaging, photogrammetric, Videography/ high-speed Videography, crime scene and laboratory photography. Photography of objects- Close up, normal, telephoto and processing. Document and finger print photography. 3-D Photography/Videography, videography/high speed videography, High-speed photography, legal aspects of visual evidence, Admissibility in the court.

References:

- Blitzer, H.L and Jacob, J; Forensic Digital Imaging and Photography, Academic Press, 2002
- Henry Horeustein; Colour Photography -A working Manual, Little Brown Co.Boston (1995).
- B.H.E. Jacobson, Ray GG Attridge; The Manual of Photography, Focal Press, London (1988).
- Jahne B; Digital Image Processing, Heidelberg Springer(1996).
- Workinson J; Art of Digital Video, Oxford Focal Press (1994).
- Upton Kobre, Brill; Photography, Pearson Education, Inc (2006).
- H.L. Blitzer and J.Jacobia; Forensic Digital Imaging and Photography, Academic Press (2002)
- David R.Redsicker; The Practical Methodology of Forensic Photography- 2nd Ed. CRC Press LLC (2001)
- R.E. Jacobson, S.F.Ray, G.G.Atridge, The Manual of Photography- Photographic and Digital Imaging, N.R. Oxford.

II SEMESTER

FORENSIC PRINTS AND IMPRESSIONS

HARD CORE (COMPULSORY PAPER)

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The biological aspects and the fundamental principles of fingerprinting.
- b. Fingerprints patterns and methods of identification.
- c. The physical and chemical techniques of developing fingerprints on crime scene evidence.
- d. The significance of foot prints.
- e. Fundamentals of Forensic Anthropology

EXISTING	CHANGES PROPOSED
<p>Unit- 1 Biological aspects, Skin Structure and ridge formulation its role in formulation of the Principles of Finger Prints; Historical data of Fingerprints; Role of pioneers.</p>	<p>No Changes</p>
<p>Unit-2 Recording techniques, Classification Henry’s ten digit classification system. Battley’s Single digit system. Use of A F I S and I A F I S and contemporary innovations in storage and retrieval of fingerprints.</p>	<p>No Changes</p>
<p>Unit-3 Development of Finger Prints from various Surfaces by powders, Gases and Liquids; Photography, Lifting and Marking-up as evidence; Ridge characteristics, comparison of fingerprints, legal compliance; Poroscopy and edgeoscopy.</p>	<p>No Changes</p>
<p>Unit-4 Footprints; classification, modes of recording, comparison and lab analysis. Blood stain pattern interpretation- utility, physical properties of blood, Angle of impact, points of convergence, origin, Low, Medium, High Velocity blood stains, Crime Scene examination, Photographic documentation of bloods pattern. Forensic Odontology- Meaning, Development & Uses, Human dentition, Dental Identification</p>	<p>Unit-4 Footprints; classification, modes of recording, comparison and lab analysis. Blood stain pattern interpretation- utility, physical properties of blood, Angle of impact, points of convergence, origin, Low, Medium, High Velocity blood stains, Crime Scene examination, Photographic documentation of bloods pattern. Forensic Odontology- Meaning, Development & Uses, Human dentition, Dental Identification</p>

<p>methods, Scientific basis, Comparison of Dental Identification to other methods. Bite Marks: Forensic Anthropology – Introduction, Scope, Utility, General Idea of human Skeleton, Identification by Facial imaging, Skull to Photo Super imposition, Facial reconstruction, photographic Comparison.</p>	<p>methods, Scientific basis, Comparison of Dental Identification to other methods. Bite Marks: examination, preservation, analysis and interpretation. Forensic Anthropology – Introduction, Scope, Utility, General Idea of human Skeleton, Identification by Facial imaging, Skull to Photo Super imposition, Facial reconstruction, photographic Comparison.</p>
<p>References :</p> <ol style="list-style-type: none"> 1) Introduction to Forensic Sciences Second Edition : William J Eckert 2) Criminalistics and Scientific investigation : Fredric Cunliffe & Piazza 3) Modern Criminal investigation : Soderman & O’connel. 4) Synopsis of forensic Medicine : Narayan Reddy. 5) Modi’s Medical Jurisprudence and Toxicology : Dr.N.J.Modi 6) Laws of Prints and Impressions : Venkiah. 7) Criminalistics- Introduction to forensic Science : Richard M Safferstin. 9) Criminal Investigation, Practical fingerprinting, thumb impression : Bridges B.C, August Vollmer and M.Monair 	

RESEARCH METHODOLOGY AND STATISTICAL METHODS

HARD CORE (COMPULSORY PAPER)

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The fundamental concepts of Scientific Research.*
- b. Application and importance of statistics in the field of Criminology/Forensic Science.*
- c. Various measures for providing statistical proof of the research study*
- d. Research Report Writing.*

Unit-1

[16 hours]

Introduction to Research. Scientific Approaches to Criminological Researches. Hypothesis formulation and testing, preparation of research proposal. Survey of Literature methodology and Sampling Techniques;

Unit –2

[16 hours]

Data collection, analysis structuring and transformation. Report Writing- Organization of the materials, Preliminaries. Drafting of the Thesis, Preparation of the Bibliography and references;

Unit-3

[16 hours]

Theory of Measurement, Scale of Measurement, Statistical Methods for Various scales of Measurements & Importance in Criminology and Forensic Science. Frequency distribution ; meaning and different methods of graphical representation (Histogram, Frequency Polygon Ogive Curves) Lorenz Curve and Gini Co-efficient. Linear Regression and Co-relation- Meaning, Methods and uses of Scattered Diagram, Karl Pearson's Co-efficient of Co-relation, Spearman's rank co-relation.

Unit-4

[16 hours]

Measures of Central Tendency- Mean, Mode, Measures of Variability, Co-efficient of Variation, Quartiles, Deciles and Percentiles, Median, Cumulative frequency, Correlation and regression; Testing of Hypothesis- Statistical Hypothesis, Type 1 and Type 2 errors, Critical Value, P-Value, c. Parametric Tests-tests of Hypothesis based on L,Z and F, One way ANOVA, Non-Parametric Test- Tests of Hypothesis based on Chi-Square Test, Sign Test and Kruskal Wallies one way ANOVA by ranks

References:

1. Thesis and Assignment Writing. Anderson, J. Durston, B.H. and Poole.M (1970)
2. Guide to Scientific and Technical Writing- Cooray, P.G. (1992).
3. Statistics and Data Analysis- Davis, J.C. (1986).
4. Research Methodology, Methods and Techniques- Kothari, C.R. (1990).
5. Methods of Criminological Research- Victor Jupp.
6. Understandable Statistics- Concepts and Methods- Barse, Charles Henry and Barse Corrinne Pellillo (1987).
7. Research methods and Statistics- Ramchandra N. .
8. Statistics- Goode and Hatt.

PRACTICALS IN FORENSIC PRINTS AND IMPRESSIONS

HARD CORE

0:0:4=4CREDITS

1. Recording of Fingerprints and identification of patterns.
2. Classification of fingerprints by Henry's and Battley's Methods.
3. Identification of Ridge Characteristics and Comparison of Fingerprints.
4. Lifting, Collection and Classification of Lip Prints
5. Lifting of surface and sunken footprints and identification of characteristics.
6. Bite mark examination and lifting.
7. Examination of simulated blood splatter and interpretation.
8. Visit to City FPB to study the equipment and techniques; report writing.

CRIMINAL MAJOR ACTS

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper, the students will know –

- a. The fundamental Nature of Substantive Laws
- b. The Procedural Laws in India.

EACH UNIT HAS 16 THEORY HOURS TO COMPLETE

Existing	Changes Recommended
<p>Unit-1 Introduction to I.P.C. General Explanations (Ss.19, 21-25,28-30, 34-38 and S.52), General Exceptions (Ss.76-106.) and of punishments.</p>	<p>Unit-1 Introduction to Bhartiya Nyaya Samhitha. Chapter-1 (Section 1 to 3) General Exceptions (Section 14 to 44)</p>
<p>Unit-2 Offence against Persons and property. Abetment, Criminal Conspiracy, Culpable Homicide and Murder (Ss.299-304, 304 A & B and 307.) Assault; Criminal Force and Criminal Intimidation; Kidnapping and Abduction. (359-363). Theft and Extortion (Ss.378-384); Robbery and Dacoity (Ss.390, 391-395.); cheating and Criminal Breach of Trust. Offences relating to marriages.</p>	<p>Unit-2 Offence against Persons and property. Abetment (S. 41-60), Criminal Conspiracy S.61 & 62), Offence against Women and Child (S.63 to 99) Culpable Homicide and Murder (Ss.100 to 110 and 307.) Hurt and Grievous Hurt (S. 114 to 125) Kidnapping and Abduction. (S.137 to -146). Offences Against Property: Theft and Extortion (Ss.303-305 & 308); Robbery and Dacoity (Ss.309 to 312); Misappropriation cheating and Criminal Breach of Trust. (Ss.314-323)</p>
<p>Unit-3 Code of Criminal Procedure. Police powers of arrest, Provisions</p>	<p>Unit-3 BHARATIYA NAGARIK SURAKSHA SANHITA, 2023</p>

<p>regarding Appeals, bail and bond, summons, warrants and proclamations. Preventive Action of the Police; Information to Police and their powers to investigate.</p>	<p>Police powers of arrest, Provisions regarding Appeals, bail and bond, summons, warrants and proclamations. Preventive Action of the Police; Information to Police and their powers to investigate.</p>
<p>Unit -4</p> <p>Indian Evidence Act. Relevancy of Fact (S.5,10, 14 and 15) Admissions, Confessions and Dying Declarations. Of Experts, Oral and Documentary Evidence. Burden of proof of witness (S. 118 and 119)</p>	<p>Unit -4</p> <p>Bhartiya Sakshya Adhiniyam-2003 Relevancy of Fact (S.3 to 10) Admissions, Confessions (15-27) and Dying Declarations. Of Experts(39-41), Oral (54-55) and Documentary Evidence 56-72). Burden of proof of witness (S. 104-109)</p>
<p>Books for Reference: -</p> <ol style="list-style-type: none"> 1. Rathan Lal and Dhiraj Lal :Indian Penal Code 2. Rathan Lal and Dhiraj Lal : Code of Criminal Procedure. 3. Rathan Lal and Dhiraj Lal : Indian Evidence Act. 4. EBC Criminal Manual 	<p>Books for Reference: -</p> <ol style="list-style-type: none"> 1. TheBhartiya Nyaya Samhitha-2023 2. The Bhartiya Nagarik Suraksha Sanhita, 2023 3. The Bhartiya Sakshya Adhiniyam-2003

TO SELECT ANY TWO PAPERS (Eight Credits)

CYBER CRIME AND CYBER FORENSICS

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The fundamental concepts of Cyberspace and its applications.
- b. Various forms of offences under the sphere of its applicability.
- c. The laws relating to cybercrime, applicable in India.
- d. The method of detection of cyber crime and use of cyber security.

Unit-1

[16 hours]

Cyber Space; meaning, definition and scope. Utility of Cyber Space. Concept of cybercrimes; Criminological perspective as a type of economic crime. Role of “*mens rea*” and types of criminal liability in cybercrime. Criminological Theories for Cyber Crime.

Unit-2

[16 hours]

EXISTING	PROPOSED CHANGES
Cyber crimes; meaning, definitions, nature and characteristics. c) Trojan Horses, d) Blended Attacks, e) Tracking Cookies f) Attacker tools, g) Keystroke Loggers, h) Rootkits;	Cyber crimes; meaning, definitions, nature and characteristics. c) Trojan Horses, d) Blended Attacks, e) Tracking Cookies f) Attacker tools, g) Keystroke Loggers, h) Rootkits; Economic Crimes arising out of Mobile Phone Banking and Payment Point, and Card related Frauds Social media Related Offences

Unit-3

[16 hours]

Laws relating to Cyber crime; Salient features of IT Amendment Act-2008, with emphasis on aspects relating to offences, punishments, investigative powers and regulations. Amendments arising due to enactment of IT Amendment Act-2008 in IPC, Cr.P.C., I.E.A.,

Unit-4

[16 hours]

EXISTING	PROPOSED CHANGES
Investigation of Cyber Crimes, collection of evidence, implications and challenges. Elementary aspects of Cyber Forensics. Cyber Security, Global, National, Industrial and individual levels, BIS 7799 and ISO17799. Credit Card Frauds, their types, investigation and detection.	Investigation of Cyber Crimes, collection of evidence, implications and challenges. Cyber Forensic Tools and Mobile Forensics. Cyber Security, Global, National, Industrial and individual levels, BIS 7799 and ISO17799.

Reference:-

Laws on Cyber Crimes : Dr. Pramod Kr. Singh.
Cyber laws and cyber crimes : Barkha and U. Ram Mohan.
E-crimes and remedies : Vasu Deva.
Combating Cyber Crimes : Paul T Augastine.
Taxmann's Law of Information Technology : D.P.Mittal
Taxmann's Law on Intellectual Property and Copyrights Act.

LABORATORY QUALITY MANAGEMENT AND STANDARDS

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The importance of standards and techniques in processing crime scene evidence.*
- b. The utility of Quality Systems in the maintenance of Laboratory Quality Assurance.*
- c. The significance of Laboratory Management.*
- d. The Importance of Laboratory Safety.*

UNIT-1: Standards for analysis

[16 hours]

Basic standards – Need of standards in analytical sciences – Basic chemical standards – Analytical standards – Reference materials – high purity substances – Certified reference materials – working or secondary standards – matrix effect in standards – Biological standards – Biochemical standards – Microbial cell lines and standards

UNIT-2: Quality Management and Laboratory Accreditation

[16 hours]

Introduction – Quality - Quality system – Quality plan – Inspection and testing – Test records – Control of inspection Handling, storage, packaging, preservation and delivery of the material – Control of quality records – Internal quality audits – Quality assurance– Training. Laboratory Accreditation – ISO 9000 and ISO 14000 and 17000 series of standards – Accreditation Boards – NABL guidelines for accreditation in India. Proficiency testing system. Internal quality control; Inter and intra laboratory testing programmes. Designing and running the proficiency testing programmes. Confidentiality. Advantages of accreditation.

UNIT-3: Laboratory Management

[16 hours]

Administration of Laboratories – Types of laboratories – Connection between field work and laboratory. Educational requirements of laboratory personnel; Routine laboratory work and Research and development. Internal organization of a laboratory. Architectural requirements – Laboratory design – Floor area furniture design – Auxiliary services – Receipt of reports and remnants – Record management – Requirement of equipment, glassware, chemicals and other material – Purchase procedure – Disposal of wastes. Review of the laboratory – Project proposal – Definition of system requirements – specifications. Commercial or Bespoke LIMS; Evaluation; Purchase and installation. – Demonstration, Validation, user training and implementation.

UNIT-IV: Laboratory Safety.

[16 hours]

Security of the premises. Laboratory Information Management system (LIMS) classification of LIMS functions – Sub-division by functional area – Definition of LIMS – Strategic design of LIMS – System development life cycle. Laboratory safety; planning and written safety plan. Safety policies, Safety resources, operations: Hazards of chemicals, solvents, poisons and explosives. Storage facilities – Biological hazards - Pressure vessels and their handling – Electrical safety – Fume cup boards- Exhausts system – Protective equipment-Emergency care and medical facilities.

REFERENCES

1. Woodget, B. W. and Cooper, D.: *Sample and Standards*, ACOL Series, Wiley 1987.
2. Dux, J. P., *Hand Book of Quality Assurance for Analytical Chemistry Laboratory*, Van Nostrand, 1986.
3. Duncan, W. L.: *Total Quality: Key Terms and Concepts*, 1995.
4. Shah, D. H.: *QA Manual*, Business Horizons, 2000.
5. Kumar, K.: *Quality Management*, ABD Pub., 2000.
6. Ross, J.: *Total Quality Management*, Vanity Book, Intl., 1995.
7. Seiler, J. P., *Good Laboratory practice*, Springer, 2000.
8. Diwan, P.: *Quality in Totality*, Manager's Guide to TQM and ISO 9000, Deepti & Deepti Pub., 2000.
9. Gyani, G. J.: *Training Manual on ISO 9000; 2000 and TQM*, Raj Pub., 1999
10. Olson, M. H. and Davis, G. B.: *Management Information Systems*, McGraw Hill, 1998.
11. Specific Guidelines for Accreditation of Forensic Science Laboratories, DST, 1998.
12. Guide for Safety in The Chemical Laboratory: Manufacturing Chemist's Association, 1972.
13. Steere N. V.(Ed.): *Hand Book of Laboratory Safety*, CRC, 1967.
14. Tilstone, W. J. and Lothridge, K.: *Crime Laboratory Management*, Taylor and Francis, 2004.
15. Clair, J. S: *Crime Laboratory Management*, Academic Press, 2003.
16. Dux, J. P., *Hand Book of Quality Assurance for Analytical Chemistry Laboratory*, Van Nostrand, 1986.

OPEN ELECTIVE PAPERS

FORENSIC SCIENCE

OPEN ELECTIVE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The significance of forensic science to human society.
- b. The fundamental principles, divisions and functions of forensic science.
- c. The basics of clue examination and photography.

Unit-1

[16 hours]

Principles of Forensic Science;
Forensic Science Organizations: State and Directorate of Forensic Sciences and allied institutions;
Laws relating to expert evidence, with reference to Cr.P.C. and I.E.A.;

Unit -2

[16 hours]

Forensic Ballistics;
Classification of firearms and ammunition; Identification of firearm, shooter and the range of firing and determination of trajectory.

Unit-3

[16 hours]

Tool marks;
Examination, preservation and tool reconstruction. Restoration of obliterated and defaced numbers/marks from objects

Unit-4

[16 hours]

Forensic Photography:
Laboratory and Police Photographic Techniques and Court Presentation; Portrait Parle: Bertillon's, Identity Kit and Computerized Portrait Building System.

References:

1. Criminal investigation- J. Horson
2. Criminalistics-an Introduction to Forensic Science- Safferstein, Richard M, (1990) Prentice Hall, NJ.
3. Crime investigation- Paul L Kirk –Edited by John I Thronton (1974) Wiley and Sons,
4. Criminal investigation- Soderman and O'Connell.
5. Forensic Science in Investigation and Trails- Sharma B.R.
6. Code of Criminal Procedure. Rathanlal and Dhirajlal (2007), Wadhwa & Co. Nagpur.
7. Avtar Singh- Indian Evidence Act.

FORENSIC MEDICINE AND TOXICOLOGY.

OPEN ELECTIVE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The Meaning and Development, importance of Personal Identification.*
- b. The types of wounds, Death and changes after death.*
- c. The importance of ascertaining various body fluids, including the DNA Profiling.*

Unit-1

[16 hours]

Introduction, Meaning, Historical Development and Importance. Characteristics and Medico-legal importance of wounds and injuries. Examination of Human Skeleton determination of age & Sex.

Unit-2

[16 hours]

Death, Meaning and modes of death. Changes after death. Asphyxial death: Meaning, types & Medico-legal importance of hanging, Strangulation and drowning.

Unit-3

[16 hours]

Blood- Laboratory Examination for Identification. Semen- Laboratory Examination for Identification. D N A Profiling Techniques.

Unit-4

[16 hours]

Poisons-Meaning and General Considerations. Classification of poisons, antidotes for poisons, Signs, symptoms and Medico legal importance of Arsenic, lead, Alcohol, Barbiturates, Cyanide, carbon-monoxide, Datura, cannabis, Opium, aluminium phosphide and Organo – Phosphorus

References:

1. Narayana Reddy K.S :Synopsis of Forensic Medicine.
2. Parikh. : Medical Jurisprudence and Toxicology
3. Krishan Vij : Text Book of Forensic Medicine and Toxicology.
4. Sharma B.R. : Forensic Science for Criminal Investigation and Trails

III SEMESTER
Specialization 'A' CRIMINOLOGY
CORRECTIONAL ADMINISTRATION

HARDCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: *After studying this paper the students will know –*

- a. The Meaning of punishments and Development of correctional institutions.*
- b. The types of Institutional corrections.*
- c. Community Corrections and other non-institutional correctional methods*

Unit-1

[16 hours]

Introduction, Historical Development of Correctional Administration. National Institute of Social Defence and Central Advisory Board on Correctional Services. State Organisations for Correctional Services, State level Boards and Committees.

Unit-2

[16 hours]

Institutional Treatment. Therapy, guidance and vocational training. Individual treatment Vs Group therapy, problems in Indian context. Unusual problems in correction of offenders in institutions.

Unit-3

[16 hours]

Community Vs Institutional Corrections. Guided Group Interaction, Foster Homes, Group Homes and Half-way Houses. Intensive Community Treatment.

Unit -4

[16 hours]

Non Institutional Correction- Probation, Parole and After Care Service.

References:

1. Principles of Criminology : E.H.Sutherland and Cressy
2. Crime Problem: Walter C Reckless
3. Crime Correction and Society : Jhonson.
4. Psychological Disorders and Crime: Neustatter.
5. Criminology and Penology : Paranjape N.V.
6. Criminology and Criminal Administration: Sirohi J.P.S.
7. Criminology and Correctional Administration: Srivatsava S.S.
8. Criminology : Ram Ahuja.
9. Prison Reforms Committee Reports

TECHNIQUES OF CRIME INVESTIGATION

HARDCORE PAPER

4:0:0=4 CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The methods of securing, searching and documenting crime scenes.
- b. Use of technology in crime scene management.
- c. The art of collecting, packaging and preserving different types of physical and trace evidence at crime scenes

Unit-1

[16 hours]

Introduction to Police Science. Application of Science & Technology in Police Work. Use of computers, video conferencing and role of media in police science and police work. Investigation-meaning, legal provisions and compliance by the police. Modes of investigation- Use of informers, crime charts / maps, MOB Records, Criminal intelligence.

Unit- 2

[16 hours]

Scientific aids and equipment in police work –I O's Kit, Invisible rays, Metal detectors, portable x-ray units and Photographic Kit, their contents and uses. Scene of Crime – Meaning & types – Methods of Search, recording; sketching, photography and videography and Panchanama.;

Unit-3

[16 hours]

Scientific methods of investigation of Homicides, Suicides, Unnatural deaths and Motor vehicle accidents. Investigative techniques of Drug related offences, Forgery and Securities and offences relating to Smuggling of Antiquities.

Unit-4

[16 hours]

Scientific techniques of collection of Clue materials- Types: Biological, Physical and chemical. Location and identification from the crime scene, victim and the suspects. Method and procedure of collection, preservation and transportation of physical clues to the experts. Scientific Interrogation of suspects, techniques and limitations; Methods and techniques employed in Interviewing of witness; use of portraits, computerized portrait building system.

References:

1. Prevention and Detection of Crime – P. Ramanujam
2. Modern Criminal Investigation – Sodderman and O' Connell
3. Techniques of Crime Scene Investigation – Stevenson & Wendell.
4. Elements of Criminal Investigation – Weston and Walls
5. Criminal Investigation- Hans Gross.
6. Hand Book of Forensic Science – K.P.A. Publication
7. Criminal Investigation – O'Hara
8. Scientific Aids to Investigation-Giriraj Shah (1999) Anmol Publicatins, New Delhi.

PRACTICAL POLICE SCIENCE

1. Examination and Search Methods of Simulated Indoor Crime Scene.
2. Examination and Search Methods of Simulated Outdoor Crime Sciences.
3. Recording of Crime Scenes by Sketching.
4. Photographic methods of recording evidence at Crime scene.
5. Crime Scene Logs and Recording Notes
6. Reconstruction of the crime scene
7. Chain of Custody and Collection, Packing and Forwarding of Clue Materials.

POLICE ADMINISTRATION

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The Organization of the State and Central Police
- b. Police Station and its management
- c. Methods of crime prevention adopted by the police and other authorized agencies.

Unit I: Introduction: State Police

[16 hours]

- (a) Historical development of (a) Ancient, (b) Medieval and (c) Modern Indian Police.
 - (b) General organization of the State Police-Administrative hierarchy and the Ranges;
 - (c) Special units:
1. **C I D**- Organization and functions of various branches
 - (a) Economic Crime Wing – Cyber division
 - (b) Intelligence Wing.
 - (c) Training wing
 - (d) Technical Services - SCRB, FSL, FPB.
 2. DCRE, KSRP, GRP, Forest & Food Cell,

Unit II: Central Police Organizations

[16 hours]

Organizational set up and functions of

- (a) Line Units: - Assam Rifles; CRPF; RPF; ITBP; CISF; BSF; NSG & SPG.
- (b) Staff Units: - BPR&D – NCRB, SVNPA, LNJNICFS, CDTS,
- (c) Directorate of Forensic Sciences- CFSL, CFPB, GEQD, DNA fingerprint unit.
- (d) Mixed Units: - CBI, IB & R and A Wing.

Unit III: Police Station

[16 hours]

- (a) Meaning & establishment of a Police Station – Rural; Urban and Metropolitan (As per Police Manual).
- (b) Types & functions of different kinds of police stations.
 - i. Civil Police Station.
 - ii. Traffic Police Station.
 - iii. Women Police Station.
- (c) Crime control records maintained in the Police Stations.
- (d) Police Help Line.

Unit IV: Crime Prevention.

[16 hours]

- (a) Police methods: E-Beat, Patrolling, Surveillance and Criminal Intelligence.
- (b) Voluntary agencies in crime prevention.
- (c) Police Relationship with Media & other related departments.
- (d) Auxiliary Units: - Civil Defense, V D P's and Special police Officers Wing.

Books for Reference

1. Shankar Sen. : Indian police Today
2. P. D. Sharma : Police and Political Order in India.
3. T. Ramanujam : Prevention and Detection of Crime.
4. Bailey : Police and Politics in India.
5. Venugopala Rao : Police Administration.
6. Mahajan : Indian Police.
7. Gupta : Police in India.
8. Mehertaj Begum : District Police Administration.
9. Giriraj Shah : Indian Police – A Retrospect.
10. James Vadakumchary : Human Rights and Police in India.
11. Human Rights Bulletin. : By Human Rights Commission.

VICTIMOLOGY

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. *The importance of Victimology.*
- b. *The causes and types of victimization.*
- c. *The significance of criminal justice system in compensation and victim mitigation.*

Unit-I [16 hours]
Historical development, nature and objectives and contemporary status. United Nations declarations on crime victims. Theories of Victimology

Unit-II [16 hours]
Classification and typology of victims by Benjamin Mendelssohn, Von Henting, Stephen Schafer and Abdul Fateh. Victimizing precipitating factors and Victim offender relationship.

Unit-III [16 hours]
Role of victims in the Criminal Justice System: victim impact statement, Participation in trial. Problems of victims: With the police; Personal and psychological; legal and social.

Unit-IV [16 hours]
Restitution, compensation and Restorative Justice Process for the victim of crime: Global Scenario and Indian Context. Victim welfare programmes and Victimological research.

References:

1. The criminal and his victim – Von Henting, Hans
2. Victimology a New focus – Dropkin and Viono
3. Surveying Victims - Sparks, James Dod
4. Readings in Victimology – Dr. K. Chokkalingam.
5. Victimology in India – V.N. Rajan.

FORENSIC ANTHROPOLOGY

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- e. The fundamental concepts of Anthropology and its applications.
- f. Techniques used to date the skeletal and its applicability in forensics.
- g. To know the cause of death through injuries and pre/post mortems.
- h. The method of detection and Identification of Living & Dead.

Unit I: Forensic Anthropology-I

[16 hours]

Theories for Anthropology: The scope of anthropology (Paleoanthropology, skeletal biology and human osteology, Paleopathology and Bio-archeology, Forensic Anthropology), Fossil formation, taphonomy.

Unit II: Forensic Anthropology-II

[16 hours]

Relative dating techniques, Chronometric dating techniques; Bio-cultural and evolutionary approaches to disease, Birth, growth and aging, infectious disease and bio-cultural evolution. Role of anthropology in mass disaster, Physical Anthropology and its forensic aspects.

Unit III: Bio-Archaeology

[16 hours]

Field recovery methods, Laboratory processing, curation and chain of custody, Age at death, sex, ancestry, height and weight, pre-mortem injury and disease, taphonomy, peri-mortem trauma, postmortem trauma, DNA Kinship and identity, Identification and forensic Anthropology: Time since death, ante-mortem records and positive ids, facial reconstruction.

Unit IV: Personal Identification of Living & Dead

[16 hours]

Identification through somatometric and somatoscopic observation, nails, occupation marks, scars, tattoo marks and deformities; handwriting and mannerisms. Genetic traits of forensic significance: ear lobe, brachydactyly, polydactyly, widow's peak, eye and hair-color, face form, frontal eminences, nasal profile, nasal tip, lips, chin form. Skeletal age (Earlier years): Prenatal ossification. Postnatal appearance and union of centers of ossification, Differences due to race, Skeleton age (Later years): Cranial suture closure, pubic symphysis, Sexing skeletal Remains: General consideration and age factors. Sex differences in skull, Pelvis and long bones. Calculation of stature of long bones: Studies on stature reconstruction in various population groups. Use of fragmentary long bones in stature reconstruction. Racial differences in human skeleton; distinguishing humans from other non- human skeletal remains; Forensic odontology, DNA isolation from bones and teeth. Age estimation. Facial Reconstruction 2-D, 3-D, etc.

Recommended Reading:

1. Application areas of anthropology, Anil Mahajan & Surinder Nath Reliance Publishing house.
2. Dental Anthropology, V.Rami Reddy Inter-India Publication,
3. A manual of biological Anthropology, Indra P. Singh & M.K. Bhasin Kamla Raj Enterprises,
4. Anthropology, Fred Plog, Clifford J. Jolly & Danial G. Bates Alfred A. KNOPF NewYork,
5. Anthropology, Kroeber Oxford & IBH Publishing Co.,
6. The use of Forensic Anthropology, Robert Pickering & David Bachman CRC Press,
7. Physical Anthropology, B.R.K. Shukla & Sudha Rastogi Palaka Prakashan,
8. The Forensic Anthropology Laboratory, Michael W. Warren, Heather A.Haney& Laurel Freas; CRC Press,(2008)
9. Forensic recovery of human remains: Dopras, Schultz, Whirler, Williams

III SEMESTER

SPECIALIZATION 'B' FORENSIC SCIENCE

FORENSIC SCIENCE-I (PHYSICAL SCIENCES)

HARDCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The various divisions involved in processing of physical and trace evidence.
- b. The tools and techniques for comparison of different types of crime scene evidence.

Unit-1

[16 hours]

Meaning and application of Physical Science in Forensic Work. Establishment and functioning of the Physical and Fire Arm Sections of the Forensic Science Laboratory. Physical matching and comparison of tool marks, cut ends and torn ends.

Unit-2

[16 hours]

Physical Matching and comparison of footwear marks and tyre marks, severed objects for mechanical fit, restoration and identification of tampered identification marks. Examination of fibers, fabrics and ligature fibers.

Unit-3

[16 hours]

Physical matching and comparison of glass by the use of physical matching, mechanical fit and refractivity. Examination and comparison of soil, dust, debris, ash. Classification and determination of the origin of paints.

Unit-4

[16 hours]

Classification of Fire arms and ammunition. Examination of the fire arm for its functionality and safety. Identification of the fire arm from the fired Cartridge Cases and Bullets. Range and angle of fire estimation, Terminal Ballistics and identification of the shooter.

References:

1. Criminal Investigation- J. Horson.
2. Criminalistics-an Introduction to Forensic Science- Safferstein, Richard M, (1990) Prentice Hall, NJ.
3. Crime investigation- Paul L Kirk –Edited by John I Thronton (1974) Wiley and Sons, NY.
4. Criminal investigation- Soderman and O'Connell.
5. Forensic Sciences- Eckert, William.
6. Criminalistics: Cunliffe and Piazza.
7. Forensic Science in Investigation and Trails- Sharma B.R
8. Introduction to forensic Science by B.S.Naber.
9. Physical Manual of the Directorate of forensic Science, Govt of India.
10. Ballistic Manual of the Directorate of forensic Science, Govt of India.

Practical:

1. Examination and comparison of soil samples.
2. Mechanical fit of broken objects.
3. Comparison and identification of tool marks.
4. Examination and comparison of fibers and fabrics.
5. Examination of bullets and cartridge cases for class characteristics.
6. Examination and comparison of Footwear marks and tyre impressions.

FORENSIC SCIENCE INSTRUMENTATION

HARDCORE PAPER

4:0:0=4 CREDITS.

Learning Objectives: After studying this paper the students will know –

- The importance of chromatographic and spectroscopic techniques in processing crime scene evidence.*
- The utility of colorimetry, electrophoresis and neutron activation analysis in identifying chemical and biological materials.*
- The significance of X-ray Diffraction and other methods in the detection of crime.*

Unit-I

[16 hours]

Microscopy: Stereoscopic binocular, Polarizing, hot stage and comparison Microscopes. Resolving powers of different microscopes, Visualization of cells and subcellular components by light microscopy, Microscopy and detection of molecules in living cells, Phase contrast, Immunofluorescence and Confocal microscopy, Electron Microscopes- Scanning and Transmission (SEM and TEM), Freeze-etch and freeze-fracture methods for Electron Microscope, Cytophotometry, Density Gradient tube and their utility.

Unit II

[16 hours]

Spectroscopy, electromagnetic spectrum, sources of radiation, their utility and limitations. Conventional sources for UV, visible and infrared rays, sources for shorter wavelength radiations (X-ray tubes), radioactivity,

Laser (He, Ne Argon, ion, dye lasers, semi-conductor lasers) a source of radiation, interaction of radiation with matter: - reflection, absorption, transmission, fluorescence, phosphorescence and their forensic applications, radiation filters.

Fluorescence and phosphorescence spectrometry: Types of sources, structural factors, instrumentation, comparison of luminescence and UV-visible absorption methods. Atomic absorption spectrometry: Instrumentation and techniques, interference in AAS, background correction methods, quantitative analysis. Atomic emission spectrometry: Instrumentation and techniques, arc/spark emission, ICP-AES, comparison ICP v/s AAS methods, quantitative analysis, applications.

Elements of X-ray spectrometry, fluorescence, energy dispersive X-ray analysis (EDX), wavelength dispersive X-ray analysis (WDX), X-ray diffraction, augur effect. IR spectroscopy- correlations of infrared spectra with molecular structure, Fourier transform infrared (FTIR) and Raman spectroscopy, fluorescence and phosphorescence spectrophotometry,

Unit III

[16 hours]

Basics and Forensic Applications : Gas Chromatography (GC), High-Performance Liquid Chromatography (HPLC), Thin Layer Chromatography (TLC) and Pyrolysed Gas Chromatography; Mass Spectrometry, GCMS, LCMS, Secondary Mass Spectrometry, Laser Mass spectrometry, Fast Atom bombardment and liquid secondary Ion Mass spectrometry, Electrospray Ionization mass spectrometry.

Unit- IV

[16 hours]

Neutron Activation Analysis, Thermal analysis methods: Basic principles and theory, differential scanning colorimetry and differential analysis, thermogravimetry. Nuclear Magnetic Resonance spectroscopy.

References:

1. Criminalistics-an Introduction to Forensic Science- Safferstein, Richard M, (1990).
2. Criminalistics: Cunlife and Piazza. Willard, H.H. Lynne L. Merrett, J. Dean, A. Frank, A. Settle. J; Instrumental Methods of Analysis, 7th Edn. CBS pub. & Distributors, New Delhi, 1986.
3. Robinson, J.W; Atomic Spectroscopy, 2nd Ed. Revised & Expanded, Marcel Dekkar, Inc, New York, 1996.
4. Workman, J; Art Springsteen; Applied Spectroscopy- A compact reference for Practitioners, Academic Press, London, 1997.
5. Khandpur, R.S; Handbook of Analytical Instruments, Tata McGraw Hill Pub. Co. New Delhi 2004.
6. Thomson, K.C. & Renolds, R.J; Atomic Absorption Fluorescence & Flame Emission Spectroscopy, A Practical Approach, 2nd Edn. Charles Griffith & Company, New South Wales, 1978.
7. Dudley, H. Williams & Fleming, I; Spectroscopic Methods in Organic Chemistry, 4th Edn, Tata McGraw- Hill Publishing Company, New Delhi, 1994.

FORENSIC SCIENCE-III (BIOLOGICAL SCIENCES)

HARDCORE PAPER

4:0:0=4 CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The significance of serological evidence.
- b. The importance of biological fluids – blood, urine, semen, saliva, sweat and milk – in crime investigations.
- c. The usefulness of skeletal remains, Paper and poisonous plants in forensic investigations.
- d. The forensic importance of DNA profiling.

Unit-1 **[16 hours]**
Meaning and application of Biological Science in Forensic Work. Establishment and functioning of the Biological, Serological and DNA Section of the Forensic Science Laboratory. Examination of Blood Stains. Grouping and Typing of blood.

Unit-2 **[16 hours]**
Examination of Semen and Seminal Stains. Examination of Saliva and Saliva Stains, Urine Stains, Fecal Matter and Fecal Stain, Hair and Fiber Examination.

Unit-3 **[16 hours]**
Human Skeleton Examination, Analyses of Paper, and poisonous plants.

Unit-4 **[16 hours]**
DNA Isolation from Biospecimen and Quantification of DNA. Preparation of DNA Profile.

References:

1. Criminal Investigation- J. Horson.
2. Criminalistics-an Introduction to Forensic Science- Safferstein, Richard M, (1990).
3. Crime investigation- Paul L Kirk –Edited by John I Thronton (1974).
4. Criminal investigation- Soderman and O’Connell.
5. Forensic Sciences- Eckert, William.
6. Criminalistics: Cunlife and Piazza.
7. Forensic Science in Investigation and Trails- Sharma B.R
8. Introduction to forensic Science by B.S.Naber.
9. Biological Manual of the Directorate of forensic Science, Govt of India.
10. Serological Manual of the Directorate of forensic Science, Govt of India.
11. DNA Manual of the Directorate of forensic Science, Govt of India.

Practical:

1. Examination and grouping of blood.
2. Examination of hair
3. Examination of natural fibers.
4. Examination of Human skeleton for gender identification and age estimation.
5. Examination and identification of poisonous plants.

SOFTCORE PAPERS [To choose any one]

CRIME SCENE MANAGEMENT

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. *The significance of serological evidence.*
- b. *The importance of biological fluids – blood, urine, semen, saliva, sweat and milk – in crime investigations.*
- c. *The usefulness of skeletal remains, Paper and poisonous plants in forensic investigations.*
- d. *The forensic importance of DNA profiling.*

Unit- I: Crime Scene Investigation (CSI)

[16 hours]

Types of Crime Scenes (Indoor, Outdoor, Mobile, Water), Various Crime Scenes (Homicide, Suicide, Murder, Accidental, HBT, Hit and Run, Hanging, Drowning, Shooting etc.). Various types of Evidences (Physical, Biological, Chemical). Various Crime Scene Search methods. Locating, Prioritize Collection of Evidence , Collect, Preserve, Inventory, Package, Transport, and Submit Evidence. Crime Scene Documentation (Sketching, Photography, Videography and Notes-taking

Unit-II: Crime Scene Management

[16 hours]

Introduction & Components of CSM: Information, Manpower, Technology & Equipment and Logistics Management. Role of various experts at crime scene. Security, safety and preservation of crime scene. Contamination control. Scene Survey and initial documentation. Co-ordination amongst various agencies involved in investigation. Co-ordination of Interstate investigation agencies. Evidence recovery log. Chain of custody. Forwarding & Authorization letters and relevant paper work. Report Writing and Evidence Evaluation: Components of reports and Report formats in Crime Scene and Laboratory findings.

Unit- III: Crime Scene Reconstruction (CSR)

[16 hours]

Steps involved (Recognition of evidence, Documentation of evidence, Collection of evidence, Evaluation of evidence, Hypothesis, Testing, Reconstruction), various crime scenes and scenarios (like Hit and Run, Accidents, Hanging, Shooting, Burglary, etc.). Role of Logic in CSR. Writing a Reconstruction report. Correlation of crime scene analysis with behavioural analysis. Cases of Special Importance pertaining to forensic examination Digital Aids in Reconstruction (3-D Photography/Videography, Computer aided Reconstruction).

Unit- V: Report Writing & Court Room Presentation

[16 hours]

Report Writing and Evidence Evaluation: Components of reports and Report formats in Crime Scene and Laboratory findings. Constitutional validity of Forensic Evidence, Expert Testimony: Admissibility in court of law, Pre-Court preparations & Court appearance, Interpretation of Reports, Presentation in the court, Common witness, Expert witness, Expert Testimony: The role of the expert-witness; acceptance of evidence in the court; mental disorder and acceptance of evidence in court; child witness in the court, Examination-in-chief, Direct examination and cross – examination by prosecution and defense.

Recommended Reading:

1. Houck, M.M & Siegel, J.A; Fundamentals of Forensic Science, Academic Press, London, 2006.
2. Mordby, J. & Reckoning, D; The Art of Forensic Detection, CRC Press New York, 2003.
3. David R.Redsicker; The Practical Methodology of Forensic Photography- 2nd Ed. CRC Press, New York, 2001.
4. R.E.Jacobson, S.F.Ray, G.G.Attridge; The Manual of Photography- Photographic and
5. Digital Imaging , N.R. Oxford.
6. Sharma, B.R; Forensic Science in Criminal Investigation & Trials, Universal Publishing Co., New Delhi, 2003.
7. Barry, A.J. Fisher; Techniques of Crime Scene Investigation, 7th Ed, CRC Press, New York, 2003.
8. Nanda B.B and Tewari, R.K; Forensic Science in India- A vision for the Twenty First Century, Select Publisher, New Delhi, 2001.
9. James, S.H and Nordby, J.J; Forensic Science- An Introduction to Scientific and Investigative Techniques, CRC Press, USA, 2003.
10. Saferstein; Criminalistics- An Introduction of Forensic Science, Prentice Hall Inc, USA,2007.

FORENSIC EXAMINATION OF EXPLOSIVES

SOFTCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The classification of explosives, including the synthesis and characterization of representative analogs.
- b. The significance of bomb scene management.
- c. The techniques of detection of explosives.

Unit-1

[16 hours]

General aspects of explosives. Classification (based on performance and structure).
Characteristics of high and low explosives.

Unit-2

[16 hours]

General Information about explosive devices including Improvised Explosive Devices (IEDs)
Explosives composition

Unit-3

[16 hours]

Analysis of Explosives. Separation of explosives in a mixture. Detection and identification of explosives

Unit-4

[16 hours]

Analysis of Organic explosives (Acetone extract). Quantitative Analysis of Explosives

References:

1. Criminal Investigation- J. Horson.
2. Criminalistics-an Introduction to Forensic Science- Safferstein, Richard M, (1990).
3. Crime investigation- Paul L Kirk –Edited by John I Thronton (1974).
4. Criminal investigation- Soderman and O’Connell.
5. Criminalistics: Cunlife and Piazza.
6. Forensic Science in Investigation and Trails- Sharma B.R
7. Introduction to Forensic Science by B.S.Naber.
8. Explosives Manual of the Directorate of Forensic Science, Govt of India.

FORENSIC EXAMINATION OF DOCUMENTS

SOFTCORE PAPER

4:0:0=4 CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The importance of examining questioned documents in crime cases.
- b. The tools required for examination of questioned documents.
- c. The significance of comparing hand writing samples.
- d. The importance of detecting electronic documents and Forensic Speaker identification.

Unit: 1

[16 hours]

Meaning, nature and scope of Forensic Document examination.

Role of Forensic Document Examiner in crime detection and expert testimony in Courts.

Unit:2

[16 hours]

Instrumentation for Questioned Documents Examination-utilization of Stereoscopic Microscope, Electrostatic detection device and Video Spectral Comparator. Types of Questioned documents such as Hand Written, Type Written and printed Collection of standards for comparison and their examination.

Unit: 3

[16 hours]

Examination of Forgery, Types and their detection. Examination of Counterfeited Currency notes, stamps, government paper, seals etc. Examination of inks, papers and identification by chemical methods.

Unit:4

[16 hours]

Examination of electronic documents and detection of morphing and Steganography, Voice print examination, audio sources and detection of similarities.

References:

1. Questioned documents: Osborne.
2. Examination of documents : Hardless.
3. Introduction to Forensic Sciences- Eckert.
4. Introduction to Criminalistics- Safferstein.
5. Criminalistics: Cunlife and Piazza.
6. Forensic science in criminal investigation and trials: B.R.Sharma.

OPEN ELECTIVE PAPERS

CYBER CRIME AND CYBER LAW

OPEN ELECTIVE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The importance of cyber space in criminological perspective.
- b. The know about cyber-crimes and malwares.
- c. The know the laws relating to cyber-crime.
- d. The know the investigation and detection of cyber-crimes.

Unit-1

[16 hours]

Cyber Space; meaning, definition and scope. Concept of cybercrimes; Criminological perspective as a type of economic crime; role of “*mensrea*” and criminal liability in cybercrime. Criminological theories of Cyber Crime.

Unit-2

[16 hours]

Cyber-crimes; meaning, definitions, nature and characteristics; Types of cyber-crimes and classifications (General, pioneers and INTERPOL) Types of Malware:- a) Viruses, b) Worms, c) Trojan Horses, d) Blended Attacks, e) Tracking Cookies f) Attacker tools, g) Keystroke Loggers, h) Rootkits;

Unit-3

[16 hours]

Laws relating to Cyber crime; Salient features of IT Amendment Act-2008, with emphasis on aspects relating to offences, punishments, investigative powers and regulations.

Unit-4

[16 hours]

Fundamentals of Investigation of Cyber Crimes and Cyber Forensics; Cyber Security, Global, National, Industrial and individual levels; Credit Card Frauds, their types, investigation and detection.

Reference:-

1. Laws on Cyber Crimes : Dr. Pramod Kr. Singh.
2. Cyber laws and cyber crimes : Barkha and U. Ram Mohan.
3. E-crimes and remedies : Vasu Deva.
4. Combating Cyber Crimes : Paul T Augastine.
5. Taxmann’s Law of Information Technology : D.P.Mittal
6. Taxmann’s Law on Intellectual Property and Copyrights Act.

POLICE ORGANISATION

OPEN ELECTIVE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. To know the historical development of Police.
- b. The know about Central Police Organizations.
- c. The know the types of police stations and crime control records maintained.
- d. The know the investigation and detection of cyber-crimes.

Unit-1

[16 hours]

Historical development of (a) Ancient, (b) Medieval and (c) Modern Indian Police. General organization of the State Police-Administrative hierarchy and the Ranges; Special units: Organization and functions of various branches.

Unit-2

[16 hours]

Central Police Organizations- Organizational set up and functions of Line Units:- Assam Rifles; CRPF; RPF; ITBP; CISF; BSF; NSG & SPG.

Staff Units: - BPR&D – NCRB, SVPNPA, LNJJN-NICFS, CDTI, DFSS, FPB, GEQD, DNA unit.

Mixed Units:- CBI, IB

Unit-3

[16 hours]

Police Station - Meaning & establishment of a Police Station. Types & functions of different kinds of police stations. Crime control records maintained in the Police Stations.

Unit-4

[16 hours]

Crime prevention and Police methods: E-Beat, Patrolling, Surveillance and Criminal Intelligence. Relationship of Police with Media & other related departments. Auxiliary Units: - Civil Defence, V D P's and Special police Officers Wing.

Reference

1. Shankar Sen. : Indian Police Today
2. P. D. Sharma : Police and Political Order in India.
3. T. Ramanujam : Prevention and Detection of Crime.
4. Bailey : Police and Politics in India.
5. Venugopala Rao : Police Administration.
6. Mahajan: Indian Police.
7. Gupta : Police in India.
8. Mehertaj Begum : District Police Administration.

IV SEMESTER

Specialization 'A' CRIMINOLOGY

SECURITY AND VIGILANCE

HARDCORE PAPER

4:0:0=4CREDITS.

Learning Objectives: After studying this paper the students will know –

- a. The importance of private security and vigilance.
- b. The tools required for security.
- c. The significance of Disaster Management.

Unit-1 [16 hours]

Introduction: concepts, terminology, importance and purpose of security, role of agencies and personnel. Types of security organizations: Transport – Government/ Private. (Bus Termini, Railway Stations, Airports and Sea Ports.) Banks & Non-Banking Financial Institutions. Industries – Government/Private. Security in multi-storied buildings and supermarkets.

Unit-2 [16 hours]

Preventive Measures by security: Compilation and Circulation of directives of the security guidelines. Problems of security and vigilance in investigation, Problems of Co-operations and Co-ordination between security agencies, Police and Public; Science and Technology in Security work for the prevention & detection of crime.

Unit-3 [16 hours]

Vigilance: Concept, Meaning, types, significance and scope, Role of Vigilance Commissions (Lokayuktha) in the Prevention of corruption; Vigilance in public and private Sectors – Banks, Industries & Financial Institutions; Frauds Analysis; Meaning, Nature Types and extent in Banks, Insurance and Financial Institutions; Role of CBI, DRI, CVC, SVC, SEBI in Detection of Frauds.

Unit-4 [16 hours]

Vigilance measures: Building security measures in accounting procedures. Internal audit systematization, Records maintenance and Periodical Job rotation and transfer of functionaries. Disaster management – Role of security officers in after natural and in prevention of man made disasters. Emergency response, need for coordination and systematic approaches during crisis.

Reference:

1. John -Fundamentals of training for security officers
2. Coffey-Law enforcement in changing society
3. Hood. R -Crime, Criminology & Public Policy
4. Anderson -Bank Security
5. David & Bagger -Industrial Security
6. Paul Fugue -Security Investigator Handbook
7. R.M. Tobes -Locks, Safes and Security
8. Crime in Banks-Indian Society of Criminology Publication- Chennai
9. Frauds in Banks - Indian Society of Criminology Publication- Chennai
10. Crime prevention through physical security – Strob
11. Story of private security – Peel
12. Fundamentals of Security – Peel
13. Organized Crime concepts and Central – D.F. Pace & J.C. Styles
14. Industrial Security: Deepak Halder

TERM WORK: DISSERTATION

HARD CORE

0:2:6=8 CREDITS

STUDY METHODOLOGY

The students are given an option to select one of the relevant topics related to Criminology and Forensic Science. The Candidates shall select a topic in consultation with the concerned Supervisor and submit dissertation in three Copies within the stipulated time. During the allocated session, the topic will have to be studied and a specific methodology is to be followed;

1. Selection of the topic
2. Study the topic to evolve the statement of the problem
3. Literature survey
4. Methodology
5. Collection of data or information on the institution or case (depending upon the topic and method)
6. Analysis and interpretation of the data.
7. Findings and conclusions.

- Each of the students will be assigned a study supervisor.
- The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
- The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
- The designated classes for the field work will be mentioned in the college and department time table.
- The contact sessions will be a part of the practical workload of the designated teacher.
- Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
- The report shall contain letters of permission from the institutions and endorsement there of as to having visited the institution for collection of information.
- The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
- The reports shall be evaluated at the term end examination, conducted by the University of Mysore.
- The evaluation will also be based upon the *viva-voce*, in relation to the report.
- Viva-Voce shall be conducted by the Internal and External Examiner for 30 Marks.
- The Dissertation shall be evaluated for 70 marks separately by both Internal and External Examiners separately.
- If the Dissertation of the candidate is found to be unsatisfactory by the examiners, such candidate shall resubmit the revised dissertation as remarked by the external examiner, within one month from the day of Viva-voce.

QUESTIONED DOCUMENT

SOFTCORE

4:0:0=4 CREDITS

Learning Objectives: *After studying this paper the students will know –*

- a. The importance of examining questioned documents in crime cases.*
- b. The tools required for examination of questioned documents.*
- c. The significance of comparing hand writing samples.*
- d. The importance of detecting electronic documents and Forensic Speaker identification.*

Unit: 1

[16 hours]

Meaning, nature and scope of Forensic Document examination.

Role of Forensic Document Examiner in crime detection and expert testimony in Courts.

Instrumentation for Questioned Documents Examination-utilization of Stereoscopic Microscope, Electrostatic detection device and Video Spectral Comparator.

Unit: 2

[16 hours]

Types of Questioned documents such as Hand Written, Type Written and printed Collection of standards for comparison and their examination.

Unit: 3

[16 hours]

Examination of Forgery- types and their detection. Examination of Counterfeit Currency notes, stamps, government paper, seals etc. Examination of inks, papers and identification by chemical methods.

Unit: 4

[16 hours]

Examination of Electronic Documents and detection of morphing and Steganography, Voice print examination, audio sources and detection of similarities.

References:

1. Questioned documents: Osborne.
2. Examination of documents: Hardless.
3. Introduction to Forensic Sciences- Eckert.
4. Introduction to Criminalistics- Safferstein.
5. Criminalistics: Cunlife and Piazza.
6. Forensic science in criminal investigation and trials: B.R.Sharma.

CORPORATE CRIMES

SOFTCORE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. Basic Corporate and financial terminology.
- b. Corporate crimes in India are linked to several other crimes.
- c. Corporate crimes often have a bearing on national security.
- d. Types of common corporate offences and their consequences.

Unit-1

[16 hours]

Introduction - Definition, Importance, Types & their behavior. Forms & Consequences of corporate crime and recent corporate scandals in India and rest of the world. Policies to control corporate crimes.

Unit-2

[16 hours]

White collar crime and corporate crime – Concept and Definitions. Types of White-collar Crimes and Method & Techniques of Investigation of White-collar Crime. Causes and Social impact of white-collar crime, method of prevention of white-collar crime and case study.

Unit-3

[16 hours]

Organized Crime – Concept, Sources and political relevance (Including the Italian – American Mafia and Europe). Interaction between corporate crime, white-collar crime and organized crime in the Developing and developed countries. Finance-oriented strategies of control in the case of corporate, white-collar and organized crime and case study.

Unit-4

[16 hours]

Environmental crime, crimes in Banking, Insurance, Pension Funds and Medical Crimes. Crimes by the Government (Water-Gate Case) - corruption among officials and corporate Social Responsibility. The legal System – SOX Act and corporate Governance Regulations in India and rest of the World, Debate on select Topics

FORENSIC PSYCHOLOGY

SOFTCORE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. The overview of forensic psychology and its applications.
- b. The legal aspects of forensic psychology.
- c. The significance of criminal profiling.
- d. The importance of psychological assessment in gauging criminal behavior.
The tools and techniques required for detection of deception.
- e. The critical assessment of advanced forensic techniques like polygraphy, narcoanalysis and brain electrical oscillation signatures.

Unit-1 - Basics of Forensic Psychology

[16 hours]

Definitions and fundamental concepts. Psychology and law; Ethical issues in forensic psychology. Assessment of mental competency; Types of mental disorders. Psychology of evidence – eyewitness testimony, confession evidence. Criminal profiling. Psychology in the courtroom, with special reference to Section 22 BNS.

Unit-2 - Psychology and Criminal Behavior

[16 hours]

Psychopathology and personality disorder. Psychological assessment and its importance. Serial murderers. Psychology of terrorism. Biological factors and crime – social learning theories, psycho-social factors, abuse. Juvenile delinquency – theories of offending (social cognition, moral reasoning), Child abuse (physical, sexual, emotional), juvenile sex offenders, legal controversies.

Unit-3 - Detection of Deception

[16 hours]

Tools for detection of deception – interviews, non-verbal detection, statement analysis, voice stress analyzer, hypnosis. Offender Profiling and violence prediction.

Unit-4 - Polygraphy

[16 hours]

Polygraphy – operational and question formulation techniques, ethical and legal aspects, the guilty knowledge test. Narcoanalysis and brain electrical oscillation signatures – principle and theory, ethical and legal issues.

References:

1. A.A. Moenssens, J. Starrs, C.E. Henderson and F.E. Inbau. Scientific Evidence in
2. Civil and Criminal Cases, 4th Edition, The Foundation Press, Inc., New York (1995).
3. Richard M Saferstein; Criminalistics, 8th Edition, Prentice Hall, New Jersey (2004).
4. J.C. DeLadurantey and D.R. Sullivan; Criminal Investigation Standards, Harper & Row, New York (1980).
5. Elaad in Encyclopedia of Forensic Science, Volume 2, J.A. Siegel, P.J. Saukko and G.C.
6. Knupfer (Eds.), Academic Press, London (2000).

IV SEMESTER
SPECIALIZATION 'B' FORENSIC SCIENCE
FORENSIC SCIENCE-II (CHEMICAL SCIENCES)

HARDCORE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. *The services offered by the chemistry section of the Forensic Science Laboratory.*
- b. *The method of searching, collecting, preserving and analyzing arson evidence.*
- c. *The detection of Gold, Alcohols etc.*
- d. *The methods of analyzing contaminants in petroleum products.*
- e. *The classification and characteristics of the narcotics, drugs and psychotropic substances.*

Unit-1

[16 hours]

Meaning and application of Chemical Science in Forensic Work. Establishment and functioning of the Chemical Section of the Forensic Science Laboratory. Fundamentals of chemical analysis. Detection and identification of inflammable materials or their residues in the exhibits of fire/arson cases.

Unit-2

[16 hours]

Qualitative and quantitative estimation of ethyl alcohol in various alcoholic preparations. Examination of chemicals used in Trap Cases. Examination of corrosive chemicals like hydrochloric acid, sulphuric acid, and nitric and alkalies in crime exhibits of acid/alkali throwing cases.

Unit-3

[16 hours]

Examination of Gold and other metals for qualitative and quantitative estimation. Sampling to profile various narcotic drugs of natural or synthetic origin under NDPS Act.

Unit-4

[16 hours]

Analysis of Petroleum Products such as petrol, Filter Paper Test for detecting Adulteration of Petrol with Kerosene/Diesel, Tests for presence of Gum Content, Detection of adulterants in Kerosene and Diesel.

References:

1. Criminal Investigation- J. Horson.
2. Criminalistics-an Introduction to Forensic Science- Safferstein, Richard M, (1990).
3. Crime investigation- Paul L Kirk –Edited by John I Thronton (1974).
4. Criminal investigation- Soderman and O'Connell.
5. Forensic Sciences- Eckert, William.
6. Criminalistics: Cunlife and Piazza.Forensic Science in Investigation and Trails- Sharma B.R
7. Introduction to forensic Science by B.S.Naber.
8. Chemistry Manual of the Directorate of forensic Science, Govt of India.
9. Petroleum Manual of the Directorate of forensic Science, Govt of India.
10. Narcotics Manual of the Directorate of forensic Science, Govt of India.

TERM WORK: DISSERTATION

HARD CORE

0:2:6=8 CREDITS

STUDY METHODOLOGY

The students are given an option to select one of the relevant topics related to Criminology and Forensic Science. The Candidates shall select a topic in consultation with the concerned Supervisor and submit dissertation in three Copies within the stipulated time. During the allocated session, the topic will have to be studied and a specific methodology is to be followed;

8. Selection of the topic
9. Study the topic to evolve the statement of the problem
10. Literature survey
11. Methodology
12. Collection of data or information on the institution or case
(depending upon the topic and method)
13. Analysis and interpretation of the data.
14. Findings and conclusions.

- Each of the students will be assigned a study supervisor.
- The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
- The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
- The designated classes for the field work will be mentioned in the college and department time table.
- The contact sessions will be a part of the practical workload of the designated teacher.
- Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
- The report shall contain letters of permission from the institutions and endorsement there of as to having visited the institution for collection of information.
- The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
- The reports shall be evaluated at the term end examination, conducted by the University of Mysore.
- The evaluation will also be based upon the *viva-voce*, in relation to the report.
- Viva-Voce shall be conducted by the Internal and External Examiner for 30 Marks.
- The Dissertation shall be evaluated for 70 marks separately by both Internal and External Examiners separately.
- If the Dissertation of the candidate is found to be unsatisfactory by the examiners, such candidate shall resubmit the revised dissertation as remarked by the external examiner, within one month from the day of Viva-voce.
 - Viva-Voce shall be conducted by the Internal and External Examiner for 30 Marks.
 - The Dissertation shall be evaluated for 70 marks separately by both Internal and External Examiners separately.
 - If the Dissertation of the candidate is found to be unsatisfactory by the examiners, such candidate shall resubmit the revised dissertation as remarked by the external examiner, within one month from the day of Viva-voce.

FORENSIC TOXICOLOGY

SOFTCORE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. The significance of toxicological studies in forensic science.
- b. The classification of poisons and their modes of actions.
- c. The absorption of poisons in body fluids.

Unit-1 [16 hours]

Forensic Toxicology – Poisons- Meaning. General considerations;
Clinical (Symptomatic) and Toxicological (Laboratory/origin based) classifications of poisons.

Unit-2 [16 hours]

General idea about Suicidal, Homicidal and Non-fatal poisons;
Routes of administration and elimination Factors effecting the action of poisons; Antidotes for poisons.

Unit-3 [16 hours]

Study of specific poisons: Datura, Opium, Arsenic, Cyanide, Carbon monoxide, Cocaine, Cannabis, Barbiturates, Alcohol and Insecticides.

Unit-4 [16 hours]

Collection of Samples: From the crime Scene and Viscera of the Deceased; Packing and preservation of samples; laboratory examination for detection of poisons

References

1. Synopsis of Forensic Medicine – Dr. Narayana Reddy
2. Parikh's Medical Jurisprudence and Toxicology.
3. Text book of Forensic Medicine and Toxicology: Dr. Krishan Vij
4. Forensic Toxicology- Dr.V.V.Pillai.

FORENSIC DNA EXAMINATION

SOFTCORE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. The significance of DNA in Life
- b. The Method of Advanced Personal Identification technique by DNA Profiling
- c. The applications of DNA profiling
- d. Interpretation of the DNA results and expert's testimony

Unit- I: Forensic DNA Profiling

[16 hours]

Possible sources for DNA, collection, transportation and preservation of various forensic samples for DNA profiling. DNA extraction techniques for different forensic samples (early techniques, solid phase extraction, differential extraction, chelex extraction, automated techniques, commercial extraction kits), RNA extraction from different forensic samples. Determining quality and Quantity of DNA and RNA, Gel elution technique. DNA Amplification: Types of PCR: Nested PCR, Touchdown PCR, Gradient PCR, Hot-starts PCR, Quantitative PCR, multiplex PCR. DNA quantification by Slot- blot assay, Pico-green micro-titer plate assay, AluQuant human DNA quantification system, endpoint PCR, PCR inhibitors & solutions, Contamination Issues, etc.

Unit-II: Advanced techniques in DNA profiling

[16 hours]

Uni-parentally inherited genetic markers in ethnic and geographical origin detection, DNA Profiling Kits (Easy DNA, Pro-filer, etc.) DNA fingerprinting of degraded samples, Slot-blot assay for quantification of DNA, DNA-DNA Hybridization, next generation sequencing, Nanoparticle technology in PCR, Drug- DNA interactions, SNP microarray for supplementary paternity testing. Genetic analysis of chromosome X (pentaplex/heptaplex PCR assay), multicopy Y-STR analysis, mitochondrial DNA analysis, DNA multi-reverse parental analysis, cytochrome analysis, cDNA Personal Effects and DNA analysis (sources and problems). DNA

Unit-III Profiling Applications

[16 hours]

Case studies in disputed paternity cases, child swapping, missing person's identity, civil immigration, veterinary, wild life and agriculture cases ;Legal perspectives – legal standards for admissibility of DNA profiling – procedural & ethical concerns, status of development of DNA profiling in India & abroad; Limitations of DNA profiling; Population databases of DNA markers –STRs, Mini STRs, SNPs. Uses of STR Typing, New & future technologies: Microarrays technology, Synthetic DNA, analysis of Degraded DNA, Low Copy Number DNA, MALDI-ToF, Mass Spectrometry.

Unit-IV: Forensic DNA evidence interpretation

[16 hours]

Interpretation of DNA typing results: Complicating Factors (Multiple contributors, degradation, and extraneous substances), System-specific Interpretational Issues (RFLP, PCR systems). Assessing strength of evidence: Determination of Genetic Concordance, Evaluation of Results, Frequency Estimate Calculations, Population Substructure, Likelihood Ratios, and Uniqueness of DNA Profile. Admissibility standards: Frye, Daubert, and the Federal Rules of Evidence, Landmark cases, The State of Debate. Prosecutor's fallacy, defendant's fallacy. Ethics of DNA analysis and Post-conviction DNA analysis.

Recommended Reading:

1. Brown, T; Gene cloning and DNA analysis: An Introduction, 5th ed. Blackwell publishing, London, 2006.
2. Butler, J; Advanced Topics in Forensic DNA Typing: Methodology, 1st Ed., Academic Press, London, 2009.
3. Eastel, S. McLeod, N. & Reed, K; DNA Profiling: Principles, Pitfalls and Potential, Harwood Academic Publishers, New Jersey, 1991.
4. Primorac, D & Schanfield, M; Forensic DNA Applications: An Interdisciplinary Perspective, CRC Press, New York, 2014.

FORENSIC PSYCHOLOGY

SOFTCORE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- f. The overview of forensic psychology and its applications.*
- g. The legal aspects of forensic psychology.*
- h. The significance of criminal profiling.*
- i. The importance of psychological assessment in gauging criminal behavior.
The tools and techniques required for detection of deception.*
- j. The critical assessment of advanced forensic techniques like polygraphy, narcoanalysis and brain electrical oscillation signatures.*

Unit-1 - Basics of Forensic Psychology

[16 hours]

Definitions and fundamental concepts. Psychology and law; Ethical issues in forensic psychology. Assessment of mental competency; Types of mental disorders. Psychology of evidence – eyewitness testimony, confession evidence. Criminal profiling. Psychology in the courtroom, with special reference to Section 22 BNS.

Unit-2 - Psychology and Criminal Behavior

[16 hours]

Psychopathology and personality disorder. Psychological assessment and its importance. Serial murderers. Psychology of terrorism. Biological factors and crime – social learning theories, psycho-social factors, abuse. Juvenile delinquency – theories of offending (social cognition, moral reasoning), Child abuse (physical, sexual, emotional), juvenile sex offenders, legal controversies.

Unit-3 - Detection of Deception

[16 hours]

Tools for detection of deception – interviews, non-verbal detection, statement analysis, voice stress analyzer, hypnosis. Offender Profiling and violence prediction.

Unit-4 - Polygraphy

[16 hours]

Polygraphy – operational and question formulation techniques, ethical and legal aspects, the guilty knowledge test. Narcoanalysis and brain electrical oscillation signatures – principle and theory, ethical and legal issues.

References:

7. A.A. Moenssens, J. Starrs, C.E. Henderson and F.E. Inbau. Scientific Evidence in
8. Civil and Criminal Cases, 4th Edition, The Foundation Press, Inc., New York (1995).
9. Richard M Saferstein; Criminalistics, 8th Edition, Prentice Hall, New Jersey (2004).
10. J.C. DeLadurantey and D.R. Sullivan; Criminal Investigation Standards, Harper & Row, New York (1980).
11. Elaad in Encyclopedia of Forensic Science, Volume 2, J.A. Siegel, P.J. Saukko and G.C.
12. Knupfer (Eds.), Academic Press, London (2000).

LAW OF PRINTS AND IMPRESSIONS

OPEN ELECTIVE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. The Biological basis of fingerprints and its historical significance in the field of identification*
- b. The Documentation methods and its importance*
- c. The significance of evidence management by fingerprints and court room presentation*
- d. The use of foot prints in criminal investigation*

Unit-1

[16 hours]

Biological aspects, Skin Structure and ridge formulation its role in formulation of the Principles of Finger Prints; Historical data of Fingerprints; Role of pioneers.

Unit-2

[16 hours]

Recording techniques, Classification Henry's ten digit classification system. Use of A F I S and I A F I S and contemporary innovations in storage and retrieval of fingerprints.

Unit-3

[16 hours]

Development of Finger Prints from various Surfaces by powders, Gases and Liquids; Photography, Lifting and Marking-up as evidence; Ridge characteristics, comparison of fingerprints.

Unit-4

[16 hours]

Footprints; meaning and Types. Modes of recording of surface footprints and sunken footprints. Gait Pattern and its use in investigation.

References :

1. Criminalistics and Scientific investigation : Fredric Cunliffe & Piazza
2. Modern Criminal investigation : Soderman & O'connel.
3. Synopsis of forensic Medicine : Narayan Reddy.
4. Modi's Medical Jurisprudence and Toxicology : Dr.N.J.Modi
5. Laws of Prints and Impressions : Venkiah.
6. Criminalistics- Introduction to forensic Science : Richard M Safferstin.
7. Criminal Investigation, Practical fingerprinting, thumb impression : Bridges B.C, August Vollmer and M.Monair

VICTIMOLOGY

OPEN ELECTIVE

4:0:0=4 CREDITS

Learning Objectives: After studying this paper the students will know –

- a. The overview of Victimology and Concept of the International Perspectives.
- b. The Classification and Victim Typologies
- c. The Role of Victim in Criminal Justice System.
- d. Contemporary issues concerning victims of crime.

Unit-I

[16 hours]

Historical development, nature and objectives and contemporary status.
United Nations declarations on crime victims.

Unit-II

[16 hours]

Classification and typology of victims by Benjamin Mendelssohn, Von Henting, Stephen Schafer and Abdul Fateh. Victim offender relationship.

Unit-III

[16 hours]

Role of victims in the Criminal Justice System, victim impact statement. Problems of victims: With the police; Personal and psychological; legal and social

Unit-IV

[16 hours]

Restitution, compensation and Restorative Justice Process for the victim of crime: Global Scenario and Indian Context. Victim welfare programmes and Victimological research.

References:

1. The criminal and his victim – Von Henting, Hans
2. Victimology a New focus – Dropkin and Viono
3. Surveying Victims - Sparks, James Dod
4. Readings in Victimology – Dr. K. Chokkalingam.
5. Victimology in India – V.N. Rajan.

UNDERGRADUATE COURSE



University of Mysore

Department of Criminology and Forensic Science

Maharaja's College, Mysore 570 005

UNIVERSITY OF MYSORE

**Syllabus of Criminology & Forensic Science (Discipline Specific Course) subject
for BA/BSc- I Semester with effect from academic year 2024-25 and onwards**

COURSE MATRIX

Subject	Paper	Credit pattern			Credit value
		L	T	P	
Criminology & Forensic Science					
1st Sem B A/B.Sc.					
DSC I	ESSENTIALS OF CRIMINOLOGY (THEORY)	3	0	0	3
DSC I Practical	PRACTICAL	0	0	2	2
II Sem B A/B.Sc.					
DSC II	CRIMINALISTICS- INTRODUCTION TO FORENSIC SCIENCE (THEORY)	3	0	0	3
DSC II Practical	PRACTICAL	0	0	2	2

**I – SEMESTER B.A./B.Sc.
ESSENTIALS OF CRIMINOLOGY (THEORY)**

TYPES OF COURSE	FORMATIVE ASSESSMENT/IA		SUMMATIVE ASSESSMENT	MARKS	
THEORY	C1 - 10	C2 - 10	C3 - 80	Total	100

Unit 1- Introduction to Criminology:

[12 hours]

- 1.1. Meaning, Definition, Nature, Scope & Importance of Criminology.
- 1.2. Definition, meaning, origin and characteristics of Criminal law.
- 1.3. Meaning, Definitions and Characteristics of Crime.
- 1.4. Classification of crime- English Common Law, Indian Penal Code and NCRB.

Unit 2- Early Schools of Criminology:

[12 hours]

- 2.1. Pre-Scientific Schools.
 - a. Demonological School.
 - b. Free-Will, Classical and Neo-Classical Schools.
- 2.2. Cartographic School.
- 2.3. Socialistic School.

Unit 3- Later Schools of Criminology:

[12 hours]

- 3.1. Typological School-
 - a. Lombrosian.
 - b. Mental Testers.
 - c. Psychiatric.
- 3.2. Sociological School-
 - a. Imitation theory.
 - b. Differential Association Theory.
 - c. Multiple Factor Approach.

Unit 4- Patterns of Criminals and Criminality

[12 hours]

- 4.1. Habitual Offenders.
- 4.2. Professional Criminals.
- 4.3. White Collar Crime.
- 4.4. Juvenile Criminality.

REFERENCES:

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|---------------------------|--|
| 1. Sutherland and Cressey | : Principles of Criminology. |
| 2. Paranjape N. V. | : Criminology and Penology with Victimology. |
| 3. Srivastava S. S. | : Criminology and Criminal Administration. |
| 4. Sharma R. N. | : Criminology and Penology. |
| 5. Ponnian N. | : Criminology and Penology. |
| 6. Shirohi J.P.S. | : Criminology and Criminal Administration. |
| 7. Sirohi J.P.S. | : Criminology and Criminal Administration. |
| 8. Ahuja R. | : Criminology. |
| 9. Tim Newburn | : Criminology. |
| 10. Girrepegowdar | : Aparadhashastra. |

**PRACTICALS
MARKS**

TYPES OF COURSE	FORMATIVE ASSESSMENT/IA		SUMMATIVE ASSESSMENT	MARKS
DISTRIBUTION OF MARKS			Conduction of Practical – 30 Viva Voce - 10	Total
PRACTICAL	C1 – 05 (Record)	C2 – 05 (Attendance)	C3 - 40	50

1. Identification of Criminologically important news caption from a given newspaper.

No	ption	ge no	lumn no

2. Identification and analysis of crime news items reported in a newspaper.

No.	ture of crime	ge no.	lumn no	ace of occurrence	st

3. Identification and Classification of crimes reported in newspapers.

No.	pe of Crime	. of crimes	uses
	ences against human body		
	ences against property		
	her IPC offences		
	scellaneous crimes		

4. Analysis of crimes, reported in newspapers, with an aim of linking them with the appropriate Theory of Criminology.
5. Collection of newspaper Clippings.
6. Graphical representation of crime reported in a newspaper and crime statistics.

II – SEMESTER B.A/B.Sc.
CRIMINALISTICS-INTRODUCTION TO FORENSIC SCIENCE (THEORY)

TYPES OF COURSE	FORMATIVE ASSESSMENT/IA		SUMMATIVE ASSESSMENT	MARKS	
THEORY	C1 - 10	C2 - 10	C3 - 80	Total	100

Unit 1- Introduction to Forensic Science: **[12 hours]**

- 1.1. Forensic Science- Definition, concepts and Importance.
- 1.2. Historical development of Forensic Science and role of pioneers.
- 1.3. Principles of Forensic Science.
- 1.4. Frye case and Daubert Standard

Unit 2- FSL Structure and Equipment: **[12 hours]**

- 2.1. Organization and functions of Forensic Science Laboratories and Institutions in India and Karnataka.
- 2.2. Divisions of Forensic Science Laboratories and their functions.
- 2.3. Instrumentation (Types and application) - Microscopy, Spectroscopy, VSC, Density Gradient Tube & Electromagnetic Spectrum.
- 2.4. Role of experts in crime investigation and detection.

Unit 3- Trace and Document Evidences: **[12 hours]**

- 3.1. Hair and Glass fracture.
- 3.2. Paint, Soil and Fiber.
- 3.3. Questioned Documents, types, and examination of handwritten documents and signatures for comparison
- 3.4. Identification of Currency Notes and Coins.

Unit 4- Forensic Ballistics and Explosives: **[12 hours]**

- 4.1. Meaning and classification of firearms and ammunition.
- 4.2. Identification of firearm and shooter.
- 4.3. Detection of range and direction of shooting.
- 4.3. Meaning and classification of explosives.

REFERENCES:

1. Nabar B. S. : Forensic Science in Crime investigation and trials.
2. Sharma B. R. : Forensic Science in Criminal investigation & trials.
3. Saferstein R. : Criminalistics.
4. Cunliffe F. and Piazza P. : Criminalistics and Scientific Investigation.
5. Advanced Technology in Forensic Investigation: Annamma John.

**PRACTICAL
MARKS**

TYPES OF COURSE	FORMATIVE ASSESSMENT/IA		SUMMATIVE ASSESSMENT	MARKS
DISTRIBUTION OF MARKS			Conduction of Practical – 30 Viva Voce - 10	Total
PRACTICAL	C1 – 05 (Record)	C2 – 05 (Attendance)	C3 - 40	50

1. Examination of Hair-
 - a. Type of medulla and Medullary Index.
 - b. Cuticular structure.
 2. Examination of fiber.
 3. Physical examination of Glass Fracture to determine the direction of force.
 4. Physical examination of Bullets and Cartridges
 5. Examination of Soil (Density gradient tube).
 6. Examination of Handwriting.
 7. Detection of Signature for forgeries.
 8. Examination of Currency notes and Coins.
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