



**List of Courses Focus on Employability/ Entrepreneurship/  
Skill Development**

**Department : Forensic Science**

**Programme Name : M.Sc.**

**Academic Year : 2016-17**

**List of Courses Focus on Employability/ Entrepreneurship/Skill Development**

Sr. No.	Course Code	Name of the Course
01.	IFSC704	Question Document
02.	IFSC706	Practical Based on Question Document
03.	IFSC 1002 (F)	Question Document
04.	IFSC 1002 (G)	Forensic Photography
05.	IFSC 1002 (H)	Practical Based on Biometrics (Through Portrait Parle Method )
06.	IFSC 1003 (F)	Practical Based on Question Document
07.	IFSC 1003 (G)	Practical Based on Forensic Photography
08.	IFSC 1003 (H)	Practical Based on Biometrics (Through Portrait Parle Method )

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## Scheme and Syllabus

*Department of Forensic Science, GG'V Bilaspur*

Semester – VII					
Semester	Paper Code	Paper	Title of the Paper	Hours/Week	Credits
Seventh Semester	IFSC701	I	Forensic science & Criminology	4	3
	IFSC702	II	Forensic techniques & Instrumentation	4	3
	IFSC703	III	Crime Scene Management	4	3
	IFSC704	IV	Questioned Documents	4	3
	IFSL705	V	Practical based on crime scene search study	6	3
	IFSL 706	VI	Practical based on questioned document	6	3
	IFSS 707	VII	Seminar	2	2
<b>Credits</b>					<b>20</b>
Semester – VIII					
Eighth Semester	IFSC801	I	Instrumental analysis-Chemical & Physical	4	3
	IFSC802	II	Instrumental Analysis – Biological Methods	4	3
	IFSC803	III	Forensic Anthropology and Finger prints	4	3
	IFSC804	IV	Forensic Chemistry and Toxicology	4	3
	IFSL 805	V	Practical based on Forensic Anthropology and Finger prints	6	3
	IFSL 806	VI	Practical based on Chemistry and toxicological analysis	6	3
	IFSS 807	VII	Seminar	2	2
<b>Credits</b>					<b>20</b>
Semester IX					
Ninth Semester	IFSC901	I	Computer Forensics and Digital investigations	4	3
	IFSC902	II	Forensic Ballistics and Physics	4	3
	IFSC903	III	Forensic Biology and Serology	4	3
	IFSC904	IV	Forensic Medicine	4	3
	IFSL905	V	Practical Based on Forensic Ballistics and Physics	6	3
	IFSL906	VI	Practical Based on Forensic Biology and Serology	6	3
	IFSC907	VII	Seminar	2	2
<b>Credits</b>					<b>20</b>

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	IFSC 1001	I	Quality Management & Research Methodology	4	3
	IFSC 1002		Elective Papers	4	3
	IFSC 1002 (A)	II	Advanced Forensic Chemistry		
	IFSC 1002 (B)		Advanced Forensic Toxicology and Pharmacology		
	IFSC 1002 (C)		Drugs of Abuse		
	IFSC 1002 (D)		Advanced Forensic Physics		
	IFSC 1002 (E)		Advanced Forensic Ballistics		
	IFSC 1002 (F)		Questioned Documents		
	IFSC 1002 (G)		Forensic Photography		
	IFSC 1002 (H)		Biometrics (Through portrait Parle Technique)		
	IFSC 1002 (I)		Advanced Forensic Biology		
	IFSC 1002 (J)		Advanced Forensic Serology & Immunology		
	IFSC 1002 (K)		Advanced Forensic Genetics & DNA Profiling		
	<b>IFSL 1003</b>		<b>Elective Practical's</b>	6	4
	IFSL 1003 (A)	III	Practical based on Advanced Forensic Chemistry		
	IFSL 1003 (B)		Practical based on Advanced Forensic Toxicology and Pharmacology		
	IFSL 1003 (C)		Practical based on Drugs of Abuse		
	IFSL 1003 (D)		Practical based on Advanced Forensic Physics		
	IFSL 1003 (E)		Practical based on Advanced Forensic Ballistics		
	IFSL 1003 (F)		Practical based on Questioned Documents		
	IFSL 1003 (G)		Practical based on Forensic Photography		
	IFSL 1003 (H)		Practical based on Biometrics (Through portrait Parle Technique)		
	IFSL 1003 (I)		Practical based on Advanced Forensic Biology		
	IFSL 1003 (J)		Practical based on Advanced Forensic Serology & Immunology		
	IFSL 1003 (K)		Practical based on Advanced Forensic Genetics & DNA Profiling		
	IFSD 1004		Dissertation		10
Credits					20
<b>Total Credits</b>					<b>80</b>



Five Year Integrated UG/PG Course in Forensic Science  
Semester -VII, IFSC- 704  
Paper - IV

Questioned Documents

Maximum Marks: 100

Allotted credits: 03

UNIT I

Nature and problems of Document examination, Classification of documents, Types of Forensic Documents; Collection, handling, preservation, marking and forwarding of documents to the laboratory; Writing instruments and their characteristics.

UNIT II

Principle of handwriting identification, Hand writing and its characteristics, Individual characteristics, Factors affecting hand writing, Samples for comparison and comparison of handwriting, Examination of Signature characteristics, Disguised, Indented and secrete writings, Anonymours letters.

UNIT III

Alterations in Documents, Examination of Paper & Ink, Examination of typed documents, Examination of Seal, rubber & other mechanical impressions, Handling and examination of charred documents, Examination of Forged currency notes.

UNIT IV

Forgery, Methods of Forgery, Age determination of documents, Basic tools needed for Forensic document examination, Photography of documents, Principle and Forensic significance of Video Spectral comparator (VSC), Electrostatic detection apparatus (ESDA).

Recommended Books

1. Hilton; O. Scientific Examination of Questioned Documents,, Elsevier, NY
2. Albert S. Osborn; Questioned Documents, 2nd Ed., Universal Law Pub., Delhi
3. Wilson R. Harrison; Suspect Documents Their Scientific Examination, Universal Law Pub. Delhi Indian
4. Hard less H.R; Disputed Documents, Handwriting and Thumbs – Print identification, profusely illustrated, Law Book, Allahabad
5. Morris Ron N. Forensic Handwriting Identification; AcadPress, London.
6. Roy A Huber, A.M. Headrick; Handwriting Identification- Facts and Fundamental, CRC Press
7. Laboratory working procedure manual, Documents DFS, New Delhi, 2005



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**Five Year Integrated UG/PG Course in Forensic Science  
Semester –VII, IFSL-706**

**Paper – VI**

**Practical Based on Questioned Documents**

**Maximum Marks: 100**

**Allotted credits: 03**

1. Examination of Erasures on Questioned document.
2. Examination of Obliteration on Questioned document.
3. Examination of Addition on Questioned document.
4. Decipher unknown Secret Writings.
5. Chromatographic comparison of different ink.
6. Comparison of Handwriting and Signatures.

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Five Year Integrated UG/PG Course in Forensic Science  
Semester – X, IFSE- 1002 (f)  
Paper –II

Questioned Documents

Maximum Marks: 100

Allotted credits: 03

UNIT – I

**Questioned Document**–Definition, Nature and History of document examination, Classification of Forensic documents-Admitted, Request and Typescript specimens, Holographic documents, Care and Handling of documents, Basic tools needed for Forensic Document Examination - Hand lens, Stereo microscope, Electrostatic detection device (EDD), Video Spectral Comparator (VSC)

UNIT – II

**Handwriting** : Principle, General qualities, Writing habits, Individual Characteristics; Factors that causes changes in Handwriting, Systematic Examination of Handwriting; Examination of signatures, Characteristics of genuine and forged signatures; Alteration of Documents, Secret writings, Anonymus writing, Disguised writing, indented writings, Charred documents.

UNIT – III

**Forgery** : Various types of forgery and their examination, Determination of sequence of strokes; Age of Documents, Examination and Identification of Paper, Ink, Typescripts, seal, rubber, Carbon copies & other mechanical impressions, counterfeiting and examination of forged currency notes, Presentation of evidence in court.

UNIT-IV

**Photography**; Basic principles and techniques of Black & White and colour photography, Cameras and lenses, developments and printing, Different kinds of developers and fixers, Linkage of Cameras and Film negatives, Digital photography, digital water marking & digital imaging, Photogrammetry and videography, crime scene and laboratory photography IR, UV and Portrait photography, Recent developments in photography.

Recommended Books:

1. Ordway Hilton; Scientific Examination of Questioned Documents, Elsevier, NY
2. Albert S. Osborn; Questioned Documents, 2nd Ed., Universal Law Pub., Delhi
3. Albert S Osborn; The Problem of Proof, 2nd Ed., Universal Law Pub. Delhi
4. Charles C. Thomas; I.S.Q.D. Identification System for Questioned Documents, willy Prior Bates Springfield, Illinois, USA
5. Wilson R. Harrison; Suspect Documents Their Scientific Examination, Universal Law Pub. Delhi Indian Reprint
6. Goutam, Shubhra and Goutam M.P. Physical Evidences- Introduction and Bibliography on their forensic analysis, Shiv Shakti Book Traders, New Delhi.
7. Morris Ron N; Forensic Handwriting Identification, Acad .Press, London (2001)
8. Lerinson Jay; Questioned Documents, Acad Press, London
9. Mcmenamin, G. R; Forensic Linguistics- Advances in Forensic Stylistics, CRC
10. Ellen David; Questioned Documents- Scientific Examination, Taylor & Francis, Washington (1997)
11. H.L. Blitzer and J.Jacobia; Forensic Digital Imaging and Photography, Academic Press (2002)



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Five Year Integrated UG/PG Course in Forensic Science  
Semester – X, IFSEL- 1002 (g)  
Paper –II

**Forensic Photography**

Maximum Marks: 100

Allotted credits: 03

**Unit I:**

Photography definition and scope, Introduction to Camera, lens, shutter depth of film

**Unit II:**

Videography, Videography for fire and crime scene, motor vehicle accident scene, surveillance photography and photographic aspects of injuries.

**Unit III:**

Basics of Digital photography, digital imaging, resolution, digital cameras, Monitors and scanners.

**Unit IV:**

Crime scene photography, photography of foot and fingerprints, Significance of photography in document examination, Photography in hit and run cases.

**References:**

1. David R Redsicker: The practical methodology Forensic photography: (second edition) CRC press
2. Duckworth J E: Forensic photography. Springfield I L. Charles C Thomas
3. Samsone SJ: Modern photography for police and fireman, Cincinnati TI OH WH. Anderson Company. 1971.



Five Year Integrated UG/PG Course in Forensic Science  
Semester - X, IFSEL- 1002 (h)  
Paper -II  
**Biometrics (Through Portrait parle technique)**

Maximum Marks: 100

Allotted credits: 03

**Unit I:**

History and definition of Biometrics, Types, features and function of Biometrics, Gait scan and principles. Face, voice, signature scan and their principles.

**Unit II:**

Fundamentals of fingerprints, History, Fingerprint patterns, Definition of patterns: Arch, Loop and Whorl, Ridge counting and Ridge tracing, Henry's system of classification (primary to key classification).

**Unit III:**

DNA and its principles in personal identification

**Unit IV:**

Introduction to skin prints, lip prints, ear prints, bare foot prints and their significance in personal identification, conventional method for development of Latent fingerprints.

**References:**

1. Ellen David; Questioned Documents- Scientific Examination, Taylor& Francis, Washington (1997).
  2. H.L. Blitzer and J. Jacobia; Forensic Digital imaging and Photography, Academic Press (2002).
  3. R.E. Jaconson, S.F. Ray, G.G. Attridge, N.R. Oxford; The Manual of Photography- Photographic and Digital Imaging, 9<sup>th</sup> Ed., Focal Press (2000).
  4. B.H.E. Jacobson, Ray GG Attridge; The Manual of Photography, Focal Press, London (1998).
  5. Upton, Kobre, Brill; Photography, Pearson Education, Inc.
- David R. Redsicker; the Practical Methodology of Forensic Photography- 2<sup>nd</sup> Ed. CRC Press LLC(2001).





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**Five Year Integrated UG/PG Course in Forensic Science**  
**Semester – X, IFSEL- 1004 (e)**  
**Paper –IV**  
**Practical based on - Advanced Forensic Ballistics**

**Maximum Marks: 100**

**Allotted credits: 04**

1. Chemical tests for powder residues (Walker's test) and Barrel wash
2. Identification of propellants
3. Examination and Comparison of fired Cartridges/cases (Caliber, firing pin, breech face, Extractor / Ejector marks etc.)
4. Determination of shot number from size and weight of shots.
5. Examination and Comparison of fired bullets – Caliber, rifling, characteristics, probable type of firearms
6. Characteristics of Firearms – Caliber, Choke, Trigger pull, Proof marks etc.
7. Determination of range of firing
8. Examination and Comparison of fired bullets – Caliber, rifling, characteristics, type of firearms
9. Restoration of Erased marking on firearm

**Five Year Integrated UG/PG Course in Forensic Science**  
**Semester – X, IFSEL-1004(f)**  
**Paper –IV**

**Practical Based on Questioned Document**

**Maximum Marks: 100**

**Allotted credits: 04**

1. Examination of ink by TLC
2. Examination of paper
3. Examination of rubber stamp.
4. Examination of typescripts and printed matters
5. Examination of photocopy documents for machine defect marks.
6. Detection and decipherment of alterations, additions and over writing.
7. Detection of forgeries including traced and simulated forgery and built up documents.
8. Decipherment of indented writings, secret writings and charred documents
9. Examination of security documents Currency notes, Stamp Papers and lottery tickets.
10. Examination of erasures-mechanical and chemical erasures.

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Five Year Integrated UG/PG Course in Forensic Science  
Semester – X, IFSEL- 1004 (g)  
Paper –IV

**Practical based on Forensic Photography**

Maximum Marks: 100

Allotted credits: 04

1. Photography of crime scene
2. Photography of Tyre print impressions
3. Photography of Hanging
4. Photography of trace evidencde
5. Photography of vehicular accidents

Five Year Integrated UG/PG Course in Forensic Science  
Semester- X, IFSEL- 1004 (h)  
Paper-IV

**Practical based on Biometrics (Through Potrait Parle Technique)**

Maximum Marks: 100

Allotted credits: 04

1. Examination of photocopy documents for machine defect marks.
2. Detection and decipherment of alteration, additions and overwriting.
3. Detection of forgeries including traced and simulated forgery and built up documents.
4. Decipherment of indented writings, secret writings and charred documents.
5. Examination of security documents Currency notes, Stamp papers and Lottery tickets.
6. Examination of erasures-mechanical and chemical erasures.
7. Photography of documents/ Crime Scene.

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