



NAAC Accredited  
'A' Grade 2014

**KARNATAK UNIVERSITY, DHARWAD**  
**ACADEMIC (S&T) SECTION**  
ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಧಾರವಾಡ  
ವಿದ್ಯಾಮಂಡಳ (ಎಸ್&ಟಿ) ವಿಭಾಗ

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No. KU /Aca(S&T)/ JS-30/2022-23/1392

Date: 19 DEC 2022

**ಅಭಿಸೂಚನೆ**

ವಿಷಯ: 2022-23ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಎಲ್ಲ PG Diploma, Advance Diploma, Diploma & Certificate Courseಗಳನ್ನು Credit ರೂಪ ಹಾಗೂ ಸೆಮಿಸ್ಟರ್ ಪದ್ಧತಿಗೆ ಸದರಿ ಎಲ್ಲ ಕೋರ್ಸುಗಳಲ್ಲಿ ಏಕ ರೂಪದ Creditಗಳನ್ನು ಅಳವಡಿಸುವ ಕುರಿತಾದ ಕರಡು ವಿನಿಯಮಾವಳಿ ಹಾಗೂ ಪಠ್ಯಕ್ರಮವನ್ನು ಅಳವಡಿಸಿರುವ ಕುರಿತು.

- ಉಲ್ಲೇಖ: 1. ವಿಶೇಷ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯ ನಿರ್ಣಯ ಸಂ. 09, ದಿನಾಂಕ: 07.12.2022  
2. ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಆದೇಶ ದಿನಾಂಕ: 15/12/2022

ಮೇಲ್ಕಾಣಿಸಿದ ವಿಷಯ ಹಾಗೂ ಉಲ್ಲೇಖಗಳನ್ವಯ ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಆದೇಶದಂತೆ, ದಿನಾಂಕ: 07.12.2022 ರಂದು ಜರುಗಿದ ವಿದ್ಯಾವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಯಲ್ಲಿ ನಿರ್ಣಯಿಸಿದಂತೆ, 2022-23ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿನಿಂದ ಅನ್ವಯವಾಗುವಂತೆ, PG Diploma / Advance Diploma / Diploma / Certificate Courseಗಳನ್ನು Credit ರೂಪ ಹಾಗೂ ಸೆಮಿಸ್ಟರ್ ಪದ್ಧತಿಯಂತೆ ಸದರಿ ಮೇಲಿನ ಎಲ್ಲ ಕೋರ್ಸುಗಳಲ್ಲಿ ಏಕ ರೂಪದ Creditಗಳನ್ನೊಳಗೊಂಡಂತೆ ಕರಡು ವಿನಿಯಮಾವಳಿಗಳಂತೆ ಈಗಾಗಲೇ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಪ್ರಕಟಿಸಲಾಗಿದೆ. ಸದರ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಕ.ವಿ.ವಿ. www.kud.ac.in ಅಂತರ್ಜಾಲದಿಂದ ಡೌನ್‌ಲೋಡ್ ಮಾಡಿಕೊಳ್ಳಲು ಸೂಚಿಸುತ್ತಾ, ವಿದ್ಯಾರ್ಥಿಗಳು ಹಾಗೂ ಸಂಬಂಧಿಸಿದ ಎಲ್ಲ ಬೋಧಕರ ಗಮನಕ್ಕೆ ತಂದು ಅದರಂತೆ ಕಾರ್ಯಪ್ರವೃತ್ತಿರಾಗಲು ಸೂಚಿಸಲಾಗಿದೆ.

ಅಡಕ: ಮೇಲಿನಂತೆ

*(Handwritten Signature)*  
ಕುಲಸಚಿವರು.

ಗೆ,

ಅಧ್ಯಕ್ಷರು / ಸಂಯೋಜಕರು, Dr. B.R.Ambedkar Studies / Basava Adhyana Peetha / KRI / Gandhian Studies / Jainology / Kanaka Studies / Kannada / Hindi / Sanskrit / Women's Studies / Yoga Studies / Psychology / Babu Jagajivan Ram Studies / Commerce / History & Arch. / Computer Science / Criminology & Forensic Sci. / Veman Studies / Management / Law / Foreign Language, BTM (KACD) ಅಧ್ಯಯನ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ (ಕ.ವಿ.ವಿ. ಅಂತರ್ಜಾಲ ಹಾಗೂ ಮಿಂಚಂಚಿ ಮೂಲಕ ಬಿತ್ತರಿಸಲಾಗುವುದು)

ಪ್ರತಿ:

1. ಕುಲಪತಿಗಳ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
2. ಕುಲಸಚಿವರ ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
3. ಕುಲಸಚಿವರು (ಮೌಲ್ಯಮಾಪನ) ಆಪ್ತ ಕಾರ್ಯದರ್ಶಿಗಳು, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
4. ಅಧೀಕ್ಷಕರು, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ / ಗೌಪ್ಯ / ಜಿ.ಎ.ಡಿ. / ವಿದ್ಯಾಮಂಡಳ (ಪಿ.ಜಿ.ಪಿ.ಎಚ್.ಡಿ) ವಿಭಾಗ, ಸಂಬಂಧಿಸಿದ ಕೋರ್ಸುಗಳ ವಿಭಾಗಗಳು ಪರೀಕ್ಷಾ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.
5. ನಿರ್ದೇಶಕರು, ಕಾಲೇಜು ಅಭಿವೃದ್ಧಿ / ವಿದ್ಯಾರ್ಥಿ ಕಲ್ಯಾಣ ವಿಭಾಗ, ಕ.ವಿ.ವಿ. ಧಾರವಾಡ.

**KARNATAK UNIVERSITY, DHARWAD**



**POST – GRADUATE DEPARTMENT OF STUDIES IN  
CRIMINOLOGY AND FORENSIC SCIENCE**

**Regulations and Syllabus**

**of the P.G. Diploma in Forensic Science Programme**

**(PGDFS)**

**( I to II Semesters)**

**2023 onwards**

## **OBJECTIVE OF THE COURSE**

*There is a great need to infuse amongst young generation the urge to involve science in all their role and goal endeavors and to make them realize that application of scientific style is not only the correct and valid procedure besides being simpler and humane. With this noble objective in mind we thought it would be proper as well as appropriate that scientific way of investigation where science was full availed and further the variety and sweep of science must be brought to the knowledge of the young minds.*

# **Regulations Governing Post-Graduate Diploma in Forensic Science**

## **Programme (PGDFS)**

### **Under the**

### **Faculty Science of Science & Technology**

*(Framed under Section 44(1)(c) of the K. S.U. Act, 2000)*

#### **1.0 Title**

These Regulations shall be called “Regulations Governing the Post Graduate Diploma in Forensic science Programme (PGDFS),” Karnatak University, Dharwad.

#### **2.0 Commencement**

These Regulations shall come into effect from the date of assent by His Excellency, the Chancellor of the University.

#### **3.0 Definitions**

In these Regulations, unless otherwise provided:

- A “**Academic Council**” means Academic Council of the University constituted according to the *Karnataka State Universities Act, 2000*.
- B “**Board of Studies**” means P.G. Board of Studies in Criminology and Forensic Science, Karnatak University, Dharwad.
- C **Course** means paper, which the student admitted to P.G. Diploma in Forensic science Programme (PGDFS), should successfully complete to receive the Post Graduate Diploma of Forensic science Programme.
- D “**Student**” means the candidate admitted to P.G. Diploma in Forensic Science Programme (PGDFS).
- E “**University**” means Karnatak University, Dharwad.

#### **4.0 Minimum Eligibility for Admission**

A candidate, who has successfully completed Bachelor’s Degree in science, Criminology, Forensic Science, medical science or equivalent from this University or of any other University recognized as equivalent there to by this University, shall be eligible for admission to the P.G. Diploma in Forensic science Programme (PGDFS) provided the candidate also satisfies the conditions like the minimum percentage of marks and other eligibility conditions as prescribed by the University from time to time . Admission shall be as per the Govt. of Karnataka Reservation Policy and directions issued in this direction from time to time.

**4.1** Intake capacity : **25**

**4.2** Teachers qualification : as per UGC/ University norms and experts from Forensic Science and related background subjects

**5.0 Duration of the Programme**

The duration of P.G. Diploma in Forensic Science Programme (PGDFS) shall be one year duration comprising of two semesters.

**6.0 Medium of Instruction and Evaluation**

The medium of instruction for P.G. Diploma in Forensic Science Programme (PGDFS) shall be in English.

**7.0 Programme Structure**

**7.1** The students of P.G. Diploma in Forensic Science Programme (PGDFS) shall study the courses as may be approved by the Board of Studies in Criminology and Forensic Science (PG), Faculty and the Academic Council of the University from time to time subject to minimum and maximum marks as outlined in these regulations.

**7.2** The detailed programme structure for P.G. Diploma in Forensic Science Programme (PGDFS) shall be as stated in Annexure –I.

**8.0 Attendance**

**8.1** Each course shall be taken as a unit for the purpose of calculating the attendance.

**8.2** Each student shall sign the attendance register maintained by the Department for each course for every hour/unit of teaching. The course teachers shall submit the monthly attendant report to the Chairperson of the Department who shall notify the same on the notice board of the Department during the first week of the subsequent month.

**8.3** Marks shall be awarded to the student for attendance as specified in the regulations concerning evaluation.

**8.4** A student shall be considered to have satisfied the required attendance for each course if he/she has attended not less than 75 % of the total number of instructional hours during the semester.

**8.5** There is no provision for condoning shortage of attendance.

**8.6** The students who do not satisfy the prescribed requirement of attendance shall not be eligible for the ensuing examination. Such candidates may seek admission afresh to the given semester.

**9.0 Examination**

**9.1** There shall be an examination at the end of each semester conducted by the University.

**9.1.1** There shall be semester-end examination of 3 hours duration for the courses carrying 75 marks.

- 9.1.2 Every student shall register for each semester-end examination as per the University Notification by submitting duly completed application form through the proper channel and shall also pay the fees prescribed.
- 9.1.3 The Office of the Registrar (Evaluation) shall allot the Register Number to the candidate at the 1st semester-end examination. That will be the Register Number of the candidate for subsequent appearances and semester-end examinations.
- 9.1.4 The programme is a fully carry-over system. A candidate reappearing for either the first or second semester examinations shall be permitted to take examinations as and when they are conducted.

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9.1.5 Candidates who have failed, remained absent or opted for improvement in any course/ courses shall appear for such course/ courses in the two immediate successive examinations that are conducted. However, in the case of the candidates appearing for improvement of their marks, the marks secured in the previous examination shall be retained, if the same is higher.

9.1.6 Candidates who desire to challenge the marks awarded to them in the semester end examinations may do so by submitting an application along with the prescribed fee to the Registrar (Evaluation) within 15 days from the announcement of results.

## 9.2 **First semester**

9.2.1 There shall be a Board of Examiners to set, scrutinize and approve question papers.

9.2.2 The BOE shall scrutinize the question papers submitted in two sets by the paper setters and submit the same to the office of the Registrar (Evaluation).

9.2.3 There shall be single valuation for first semester. The examiners (Internal or External) shall value the answer scripts and shall indicate the marks awarded to each question on marks list.

9.2.4 The Office of the Registrar Evaluation shall process and announce the results.

## 9.3 **Second Semester:**

9.3.1 There shall be a Board of Examiners to set, scrutinize and approve question papers.

9.3.2 As far as practicable, it will be ensured that 50% of the paper setters and examiners are from other Universities/ Research Institutes.

9.3.3 Each answer script of the semester-end examination (theory and Practical /project report) shall be assessed by two examiners (one internal and another external). The marks awarded to that answer script shall be the average of these two evaluations. If the difference in marks between two evaluations exceeds 20% of the maximum marks, such a script shall be assessed by a third examiner. The marks allotted by the third examiner shall be averaged with nearer award of the two evaluations.

#### 9.4 Evaluation

- 9.4.1 Each Course shall have two evaluation components - Internal Assessment (IA) and the Semester End Exams.
- 9.4.2 The IA component in a course shall carry 25% and the Semester End Examination shall carry 75%. Courses having 25% marks as internal assessment shall have 3 marks allotted to attendance.
- 9.4.3 Marks for attendance shall be awarded to the students as stipulated below :

Attendance (in percentage)	Marks
Above 90	3
Above 80 and up to 90	2
Above 75 and up to 80	1
75	No marks

- 9.4.4 Internal Assessment (IA) shall be based on written tests/ assignments/ seminars and /or any other instructional activity. However, the number of IA components per course per semester shall not be less than two.
- 9.4.5 The IA marks list shall be notified on the Department notice board as and when the individual IA components are completed and the consolidated list shall be submitted to the Office of the Registrar Evaluation before the commencement of semester-end examination.
- 9.4.6 The tests shall be written in a separately designated book supplied by the University which shall be open for inspection by the students after evaluation.
- 9.4.7 There is no provision for seeking improvement of Internal Assessment marks.

#### 10.0 Maximum duration for completion of the Programme

- 10.1 A candidate admitted to P.G. Diploma in Forensic Science Programme (PGDFS) shall complete it within a period, which is double the duration of the programme from the date of admission.
- 10.2 Whenever the syllabi are revised, the candidate reappearing shall be allowed for the examinations only according to the new syllabi.

#### 11.0 Declaration of Results

- 11.1 The minimum marks for a pass in each course shall be 40% of the total marks including both the IA and the semester-end examinations. Further, the candidate shall obtain at least 50% of the marks in the semester-end examination. There is no minimum for the IA marks.
- 11.2 Candidates shall secure a minimum of 50% in aggregate in all courses of the programme in each semester to successfully complete the programme.
- 11.4 For the purpose of announcing the results, the aggregate of the marks secured by a candidate in two semester examinations shall be taken into account. However, Ranks shall not be awarded in case the candidate has not successfully completed each of the semesters in first attempt or has not completed the programme in the stipulated time or had applied for improvement of results.

11.5 The grading of candidates at the examination shall be as follows:

<b>Percentage of Marks</b>	<b>Class</b>
70.00 % and above	First class with Distinction
60.00 to 69.99%	First Class
50.00 to 59.99%	Second Class



# Annexure – I

## Detailed Course Structure of the Post Graduate Diploma in Forensic Science Programme (PGDFS)

Course code	Semester	Subjects	Max. Marks		Total Marks	Hrs/ week	Credits
			IA	Sem. end Exam			
	<b>I</b>	<b>Compulsory Courses</b>					
DP33T101	1.1	Basics of Forensic Science	40	60	100	04	04
DP33T102	1.2	Essentials of Forensic Science	40	60	100	04	04
DP33T103	1.3	Crime Scene Management	40	60	100	04	04
DP33T104	1.4	Forensic Medicine	40	60	100	04	04
DP33P105	1.5	Practical's- I	40	60	100	04	04
		<b>Total Marks for the First Semester</b>	<b>200</b>	<b>300</b>	<b>500</b>	<b>20</b>	<b>20</b>
	<b>II</b>	<b>Compulsory Courses</b>					
DP33T201	2.1	Cyber Crime and Cyber Security	40	60	100	04	04
DP33T202	2.2	Fingerprint Science	40	60	100	04	04
DP33T203	2.3	Forensic Documents	40	60	100	04	04
DP33T204	2.4	Forensic Instrumentations	40	60	100	04	04
DP33P205	2.5	Practical's -II	40	60	100	04	04
		<b>Total Marks for the Second Semester</b>	<b>200</b>	<b>300</b>	<b>500</b>	<b>20</b>	<b>20</b>
		<b>GRAND TOTAL (SEMESTER I &amp; II)</b>	<b>400</b>	<b>600</b>	<b>1000</b>	<b>40</b>	<b>40</b>

\* All Courses are compulsory

**P. G.DIPLOMAIN FORENSIC SCIENCE  
SEMESTER I SYLLABUS**

<b>PGDFS</b>	<b>1.1 Basics of Forensic Science (DP33T101)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Are able to understand the origin of forensic science.</li> <li>• Will understand different branches been helping hand for forensic science in probing crime.</li> <li>• Will obtain knowledge regarding forensic science laboratories, its functions and administration.</li> <li>• Will gain knowledge regarding conclusive evidences like fingerprint and DNA</li> <li>• Will be able to gain knowledge regarding different laws</li> </ul>

<b>Course Code</b>	<b>DP33T101</b>
<b>PGDFS</b>	<b>1.1 Basics of Forensic Science</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>History, Development and Fundamentals of Forensic Science</b></p> <ol style="list-style-type: none"> <li>1. Definition and origin of term “Forensic”</li> <li>2. Nature and scope, Principles of Forensic Science</li> <li>3. Global development of Forensic Science</li> <li>4. Pioneers of forensic science and their contribution to various branches of forensic science</li> <li>5. Organizational structure of Forensic science Laboratories in India</li> </ol>
<b>Unit II</b>	<p><b>Branches in Forensic Science</b></p> <ol style="list-style-type: none"> <li>1. Physicsdivisions-Ballistics,voice,audio-video,automobilesengineering</li> <li>2. Chemistry division- chemicals, drugs, poisons extraction and examination</li> <li>3. Questioned documents division-(stylistics, linguistics, counterfeit)</li> <li>4. Cyber division, superimposition, forensic artistry</li> <li>5. Fingerprint division(Prints and other impressions)</li> <li>6. Forensic Psychology(Criminal profiling, polygraph, narcoanalysis, brain mapping)</li> </ol>

<b>Unit III</b>	<b>Physical Evidences</b> <ol style="list-style-type: none"> <li>1. Physical evidences- Definition, Types</li> <li>2. Biological evidences- Blood, semen, saliva, Hairs and fibers</li> <li>3. Physical evidences- Fingerprints, footprints, Tool mark, explosives, ballistics etc</li> <li>4. Chemical evidences- Drugs, Poisons, Alcohol</li> <li>5. Trace evidences-Glass, fibres, Paint, petroleum products, cement etc</li> </ol>
<b>Unit IV</b>	<b>Laws relating to expert and scientific evidence</b> <ol style="list-style-type: none"> <li>1. Expert- Definition, expert evidence.</li> <li>2. Special provisions in CrPC 1973 on experts' attendance in court.</li> <li>3. Important sections in Indian Evidence act about expert and evidences(e.g.-Section 45 )</li> <li>4. Special laws- The drugs Act-1940, Narcotic Drugs and Psychotropic Substances Act-1985, The Arms Act-1959, Explosives Act-1984.</li> </ol>

### Suggested Readings

1. Bare Acts with short notes on the following: Narcotic Drugs & Psychotropic Substances Act, Drugs & Cosmetic Act, Explosive Substances Act
2. Criminal Procedure code, 1973
3. Girad, J. E. (2017). *Criminalistics: Forensic science in crime*, Jones and Bartlett Publishers, Inc; 4th edition, ISBN-10: 1284142612, ISBN-13: 978-1284142617.
4. Indian Evidence Act, 1872
5. Indian Penal Code, 1860.
6. Krishnamurthy, R. (2011). *Introduction to Forensic science in crime investigation*, India: Selective & Scientific Books.
7. Lee, H. C. (2011). *Physical Evidence in Forensic Science*, Lawyers & Judges Pub Co; 3rd edition, ISBN-10: 1936360012, ISBN-13: 978-1936360017.
8. Nabar, B. S. (2013). *Forensic science in crime investigation*, Hyderabad, India: Asia Law House Hyderabad.
9. Sharma, B.R. (2014). *Forensic science in criminal investigation and trials*, New Delhi, India: Universal Law Publishing Co. Pvt. Ltd.
10. Universal's Legal Manual, (2015). *Criminal Manual: Cr.P.C., I.P.C. & Evidence*, Universal Law Publishing

<b>PGDFS</b>	<b>1.2 Essentials of Forensic Science (DP33T102)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Will be able to understand the historical development of fingerprint science, its types, development and classification.</li> <li>• Will have a general understating regarding types of documents, and its characteristics</li> <li>• Will gain knowledge regarding various aspects of forensic biology and serology</li> <li>• Will understand the importance of ballistic evidences in investigation.</li> </ul>

<b>Course Code</b>	<b>DP33T102</b>
<b>PGDFS</b>	<b>1.2 Essentials of Forensic Science</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>Fingerprints and other impressions</b></p> <ol style="list-style-type: none"> <li>1. History and development</li> <li>2. Formation of friction ridges, Classification of fingerprints(Patterns), Types of fingerprints (latent, patent and plastic)</li> <li>3. Henry’s classification system, extension of Henry’s system, Single digit classification, Three levels of examination</li> <li>4. Comparison of fingerprints-Class and Individual characteristics</li> <li>5. Developmental techniques latent fingerprints</li> </ol>
<b>Unit II</b>	<p><b>Questioned document</b></p> <ol style="list-style-type: none"> <li>1. Introduction, definition, scope and significance.</li> <li>2. Principles of handwriting, factors affecting hand writing, Class and individual characteristics of handwriting and type writings.</li> <li>3. Various types of forgeries, alterations and their examination</li> <li>4. Handling, care and preservation of documents.</li> <li>5. Detection and decipherment of alterations, erasures including additions, overwriting, obliterations.</li> <li>6. Advancements in forensic document examination.</li> </ol>
<b>Unit III</b>	<p><b>Forensic biology and serology</b></p> <ol style="list-style-type: none"> <li>1. Basics and Examination of various body fluids-blood, semen, saliva, sweat, urine</li> <li>2. Examination of various biological evidences-diatoms, human and animal hair.</li> <li>3. DNA-Structure, coding and non coding DNA</li> <li>4. PCR amplification, technology and methodology</li> <li>5. Paternity and maternity testing</li> </ol>

<b>Unit IV</b>	<b>Forensic Physics and Ballistics</b> <ol style="list-style-type: none"> <li>1. Introduction to Forensic ballistic, History of Firearms</li> <li>2. Classification of firearms</li> <li>3. Types of Ammunition, Projectiles, Mechanism of Firing</li> <li>4. GSR-Detection methods and analysis</li> <li>5. Gunshot wounds, Nature of Injuries–Entry and Exit wounds</li> </ol>
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### Suggested Readings

1. Galton, F. (1892). *Finger Prints*, London: Macmillan And Co.
2. Hawthorne, M. R. (2008). *Fingerprints: Analysis and Understanding*, USA: CRC Press, ISBN-10: 1420068644, ISBN-13: 978-1420068641.
3. Henry, E. R. (1900). *Classification and Uses of Finger Prints*, London : George Routledge and Sons, Limited.
4. Hunter, W. (2005). *Solving Crimes with Physics (Forensics: the Science of Crime Solving S.)*, Mason Crest Publishers; Illustrated edition, ISBN-10: 1422200361, ISBN-13: 978-1422200360.
5. James, S. H., & Nordby, J. J. (2015). *Forensic Science an Introduction to Scientific and Investigative Techniques*, CRC Press; 4<sup>th</sup> Edition, ISBN-10: 1439853835, ISBN-13: 978-1439853832.
6. Krishnamurthy, R. (2011). *Introduction to Forensic science in crime investigation*, India: Selective & Scientific Books.
7. Nabar, B. S. (2013). *Forensic science in crime investigation*, Hyderabad, India: Asia Law House Hyderabad.
8. Osborn, A. S. (1910). *Questioned Documents*, Brooklyn, New York: The Genesee Press.
9. Sharma, B. R. (2014). *Forensic science in criminal investigation and trials*, New Delhi, India: Universal Law Publishing Co. Pvt. Ltd.
10. Tripathi, A., & Dwivedi, A. K. (2012). *Forensic Serology & Blood Examination*, Selective & Scientific Books, ISBN-10: 818912840X, ISBN-13: 978-8189128401.

<b>PGDFS</b>	<b>1.3 Crime Scene Management (DP33T103)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Will be able to understand basics of crime scene, significance, physical evidences and certain procedures relating to crime scene investigation</li> <li>• Will have a deeper understanding regarding crime scene photography, Collection and preservation of various evidences.</li> <li>• Will be able to reconstruct the crime scene.</li> </ul>

<b>Course Code</b>	<b>DP33T103</b>
<b>PGDFS</b>	<b>1.3 Crime Scene Management</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>Crime Scene investigation</b></p> <ol style="list-style-type: none"> <li>1. Crime scene:- Definition, Importance, problems, location, nature of scene</li> <li>2. Classification of crime scene</li> <li>3. Significance and ethics of crime scene investigation</li> <li>4. Physical Evidences: Definition, Importance, Utility and sources, Types of physical evidences(physical, chemical, biological and digital)</li> <li>5. Crime scene procedure- Role of first responding officer, initial crime scene response, crime scene communication, legal implications for crime scene search</li> </ol>
<b>Unit II</b>	<p><b>Crime scene documentation, collection and preservation of physical evidences</b></p> <ol style="list-style-type: none"> <li>1. Crime Scene photography- Types of Cameras, types media, number of photographs, admissibility of photographs, videography of the crime scene</li> <li>2. Collection and preservation of trace and physical evidences- Fingerprints, Impression Evidence, Tool Marks, Hair and Fiber Evidence, other Trace Evidence (Glass, Paint and Soil),</li> <li>3. Collection and preservation of explosives-Firearms, explosives Accelerants and Flammable Fluids.</li> <li>4. Collection and preservation of Biological Evidence-Blood, Body Fluids and Tissue), Questioned Document, Drug Evidence and Bite Mark Evidence.</li> </ol>

<b>Unit III</b>	<b>Crime scene reconstruction</b> <ol style="list-style-type: none"> <li>1. Definition, nature and stages of crime scene reconstruction.</li> <li>2. Reconstruction based on blood spatter patterns, shooting range of firearm projectile and gunshot residue</li> <li>3. Linking cases by Modus oprendi and signatures</li> <li>4. Crime scene analysis, interpretation of exhibits and data interpretation.</li> <li>5. Principle of analysis and ethics in crime scene analysis</li> </ol>
<b>Unit IV</b>	<b>Crime scene investigation</b> <ol style="list-style-type: none"> <li>1. Crime investigation in case of homicide</li> <li>2. Crime investigation in case of suicide</li> <li>3. Crime investigation in case of accidental and negligence death</li> <li>4. Crime investigation in case of road and vehicular accidents</li> <li>5. Crime investigation in case of rape and sexual assault</li> </ol>

### Suggested Readings

1. Bevel, T., & Gardner, R. M. (2008). *Bloodstain Pattern Analysis with an Introduction to Crime Scene Reconstruction*, CRC Press; 3rd edition, ISBN-13: 978-1420052688
2. Chatterjea, M. N., & Shinde, R. (2012). *Textbook of Medical Biochemistry*, JPB; eighth edition, ISBN-10: 9350254840, ISBN-13: 978-9350254844.
3. Fish, J. T., Miller, L. S., & Wallace, E. W. (2014). *Crime Scene Investigation*, Elsevier Inc., ISBN: 978-1-4557-7540-8
4. Gardner, R. M., & Bevel, T. (2009). *Practical Crime Scene Analysis and Reconstruction*, CRC Press, ISBN 9780367778217.
5. Houck, M. M., & Siegel, J. A. (2015) *Fundamentals of Forensic Science*, Elsevier Ltd., 978—12-800037-3. doi: <https://doi.org/10.1016/C2013-0-12985-6>
6. Malocco, D. E. (2015). *Forensic Science: Crime Scene Analysis*, Createspace Independent Pub; 2nd edition, ISBN-10: 1508934401, ISBN-13: 978-1508934400.
7. Nabar, B. S. (2013). *Forensic science in crime investigation*, Hyderabad, India: Asia Law House Hyderabad.
8. Pepper, I. (2004). *Crime Scene Investigation*, Open University Press, ISBN-13: 978-0335214907.
9. Rao, M. S., & Maithil, B. P. (2013). *Crime Scene Management a Forensic Approach*, Selective & Scientific Books; 2nd edition, ASIN: B01M4LAM9T, ISBN-10: 8189128280, ISBN-13: 978-8189128289
10. Sharma, B. R. (2014). *Forensic science in criminal investigation and trials*, New Delhi, India: Universal Law Publishing Co. Pvt. Ltd.

<b>PGDFS</b>	<b>1.4 Forensic Medicine(DP33T104)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Will be able to understand basics of forensic medicine which includes identification of living or dead, inquest, autopsy and etc.</li> <li>• Will have a greater knowledge of medico-legal importance of wounds and injuries.</li> <li>• Will be able critically evaluate factors affecting death and time since death.</li> <li>• Will begin to determine age, height and gender on the basis of bones as evidence.</li> </ul>

<b>Course Code</b>	<b>DP33T104</b>
<b>PGDFS</b>	<b>1.4 Forensic Medicine</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>Basics Forensic medicine</b></p> <ol style="list-style-type: none"> <li>1. Meaning, Definition, Nature and scope of Forensic Medicine</li> <li>2. Inquest –Types</li> <li>3. Identification of living and dead person</li> <li>4. Medico legal Autopsy</li> <li>5. Identification of decomposed and Mutilated bodies</li> </ol>
<b>Unit II</b>	<p><b>Wounds and injuries</b></p> <ol style="list-style-type: none"> <li>1. Wounds and injuries- meaning and types</li> <li>2. Wounds and injuries in violent and sexual offences</li> <li>3. Medico legal importance of wounds and injuries.</li> <li>4. Abortion, pregnancy, infanticide- Meaning, causes and classification.</li> </ol>
<b>Unit III</b>	<p><b>Death</b></p> <ol style="list-style-type: none"> <li>1. Death-Definition, modes</li> <li>2. Signs of death</li> <li>3. Death from asphyxia and other types</li> <li>4. Post – mortem examination and Post – mortem changes,</li> <li>5. Estimation of time since death</li> </ol>
<b>Unit IV</b>	<p><b>Bones in identification and Forensic Entomology</b></p> <ol style="list-style-type: none"> <li>1. Human Dentition- Types of teeth, determination of Age, Bite Marks</li> <li>2. Determination of Age, Sex and Height through bones</li> <li>3. Identification through skull superimposition and facial reconstruction.</li> <li>4. Forensic Entomology- Introduction, Insects of forensic importance, Insects on Carrion, Forensic applications</li> </ol>



## Suggested Readings

1. Agarwal, A. (2019). *Forensic Medicine and Toxicology for MBBS*, Avichal Publishing Company; 2nd edition, ISBN-13: 978-8177394917.
2. Bardale, R. (2021). *Principles of Forensic Medicine & Toxicology*, Kundli, Haryana, India: Jaypee Brothers Medical Publishers; Third edition, ISBN-13: 978-9390595419.
3. Biswas, G. (2012). *Review of Forensic Medicine and Toxicology*, Daryaganj, New Delhi: Jaypee Brothers Medical Publishers (P) Ltd., ISBN 978-93-5025-896-5
4. Hodgson, E. (2010). *A textbook of Modern Toxicology*, Hoboken, New Jersey: A John Wiley & Sons, Inc., ISBN 978-0-470-46206-5
5. Klaassen, C. D. (2013). *Casarett & Doull's Toxicology: The basic Science of Poisons*, India: Mc Graw Hill Education/Exclusively distd . By Jaypee; 8th edition, ISBN-13: 978-0071769235.
6. Narayan Reddy, K. S. (2017). *The Essentials of Forensic Medicine and Toxicology*, India: Jaypee Brothers Medical Publishers; Thirty-fourth edition, ISBN -13: 978-9352701032
7. Parikh, C.K. (2007). *Parikh's Textbook of Medical Jurisprudence, Forensic medicine and Toxicology*, CBS Publishers and Distributors. 6<sup>th</sup> Ed., ISBN-13: 978-8123906751.
8. Singhal, S. K. (2020). *Singhal's Forensic Medicine & Jurisprudence*, India: The National Book Depot; 5th edition, ISBN-13: 978-9380206554
9. Singh, V. P. (2020). *Legal Issues in Medical Practices*, India: Jaypee Brothers Medical Publishers; 2nd edition, ISBN-13: 978-9389776058.
10. Umadethan, B. (2017). *Principles and Practice of Forensic Medicine*, India: CBS; 2nd edition, ISBN-13: 978-9385915376.

<b>PGDFS</b>	<b>PRACTICALS – I (DP33P105)</b>
<b>Course outcomes</b>	<b>After successfully completing this course students</b> <ul style="list-style-type: none"> <li>• Will be able to scientifically analyse the scene of crime</li> <li>• Will be able to sketch different types of crime scenes</li> <li>• Will be able to identify types of wounds and injuries</li> <li>• Will be able to differentiate between genders through human dentition</li> <li>• Will be able to apply different types of blood tests</li> </ul>

<b>1.5</b>	<b>1.5 PRACTICALS – I</b>
<b>Course code</b>	<b>(DP33P105)</b>
1.	Locating and fixing of physical clues in different types of simulated crime scenes (Murder, suicide, theft, burglary, rape, etc)
2.	Analysis of different types of Simulated crime scenes (Murder, suicide, theft, burglary, rape, etc)
3.	Sketching of different types of simulated crime scenes (Murder, suicide, theft, burglary, rape, etc)
4.	Examination and analysis of various types of wounds and injuries
5.	Determination of sex through bones and age through human dentition
6.	Examination and comparison of human and animal hair
7.	Examination of different types of fibres
8.	Blood Tests: Benezidine, Phenolphthalein, Haemin crystal test and Blood grouping

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**P. G.DIPLOMA IN FORENSIC SCIENCE**

**SEMESTER II SYLLABUS**

<b>PGDFS</b>	<b>2.1 Cybercrime and Cyber Security (DP33T201)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Will be able to use and understand the subject matter of cybercrime and cyber security</li> <li>• Will have a general understating regarding evolution of the cybercrime and its laws</li> <li>• Will be able critically evaluate trends in cyber crime</li> <li>• Will begin to think critically about types of cybercrime, investigative methods and recent trends in cybercrime.</li> </ul>

<b>Course Code</b>	<b>DP33T201</b>
<b>PGDFS</b>	<b>2.1 Cybercrime and Cyber Security</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>Introduction to computer forensics</b></p> <ol style="list-style-type: none"> <li>1. Cyberspace and Criminal Behaviour</li> <li>2. Cyber forensic investigative steps</li> <li>3. Types of cyber crimes</li> <li>4. Digital evidence search, seizure and preservation, IT Act</li> </ol>
<b>Unit II</b>	<p><b>Identity Theft and Identity Frauds</b></p> <ol style="list-style-type: none"> <li>1. Physical Methods of Identity Theft</li> <li>2. Mail Theft, Dumpster Diving, Theft of Computers, Bag Operations,</li> <li>3. Child Identity Theft, Insiders, Fraudulent or Fictitious Companies,</li> <li>4. Card Skimming, ATM Manipulation, and Fraudulent Machines</li> <li>5. Virtual or Internet-Facilitated Methods, Phishing, Spyware and Crimeware</li> </ol>
<b>Unit III</b>	<p><b>Cyber forensic investigative tools and Mobile forensics</b></p> <ol style="list-style-type: none"> <li>1. Disk imaging, Data recovery tools, and Network forensic tools</li> <li>2. Mobile forensics: IMEI and CDR</li> <li>3. The Emergence of e-Cash</li> <li>4. Prepaid Cards, Stored Value Cards, Mobile Payments and Internet Payment Services</li> </ol>
<b>Unit IV</b>	<p><b>Cyber security and cyber terrorism</b></p> <ol style="list-style-type: none"> <li>1. SCADA systems, Firewalls and wireless access points,</li> <li>2. Network protocols, Password management, OTP, antivirus software and QR code.</li> <li>3. Roots of Contemporary Terrorism, Propaganda, Information Dissemination, Recruiting, and Fundraising, Attack Mechanism.</li> </ol>

**Suggested readings:**

1. Bhusan, M. (2018). *Fundamental of cyber security: Principles, Theory and Practices*, BPB Publications, ISBN-9789387284807
2. Bothra, H. (2017). *Hacking*, Khanna Publishing, ISBN-9789386173058
3. Britz, M. T. (2004). *Computer Forensic Science and Cybercrime: An Introduction*, Pearson Education India; third edition, ISBN-13: 978-0132677714.
4. Godbole, N., & Belapure, S. (2011). *Cyber Security*, Wiley Publication, ISBN- 978-8126521791
5. Jain, N., & Kalbande, D. R. (2016). *Digital Forensic: The Fascinating World of Digital Evidences*, Wiley Publication, ISN- 978-8126565740
6. Jain, N., & Menon, R. (2020). *Cyber Security and Cyber Laws*, Noida, India: Wiley India Pvt Ltd. 1402, ISBN- 978-9390395750
7. Mali, P. (2017). *Cyber law & Cyber Crimes simplified*, Cyber Infomedia.
8. Pieprzyk J., & Hardjono, T. (2010). *Fundamentals of Computer Security*, Springer, ISBN-13: 978-3642077135
9. Sandhu, J. S. (2021). *Cyber Infomedia*, Notion press, ISBN- 979-8885036221
10. Singer, P. W., & Friedman, A. (2013). *Cybersecurity and Cyberwar: What Everyone Needs to Know*, USA: Oxford University Press India; Illustrated edition, ASIN: 0199918112, ISBN-13: 978-0199918119.

<b>PGDFS</b>	<b>2.2 Fingerprint Science (DP33T202)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Will be able to understand the origin of fingerprint science.</li> <li>• Will obtain knowledge regarding different patterns of fingerprint and its applicability in crime investigation.</li> <li>• Will have a general understating regarding formation of ridges in fingers, ridge characteristics and its applicability in court of law.</li> <li>• Will be able critically evaluate new methods of identification and analysis.</li> </ul>

<b>Course Code</b>	<b>DP33T202</b>
<b>PGDFS</b>	<b>2.2 Fingerprint Science</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>Introduction to Dactyloscopy</b></p> <ol style="list-style-type: none"> <li>1. Origins and development of fingerprints,</li> <li>2. Patterns of fingerprints, visible, latent and plastic fingerprints.</li> <li>3. Methods for visualizing, lifting, and comparing latent fingerprints</li> </ol>
<b>Unit II</b>	<p><b>Biological formation of friction ridges</b></p> <ol style="list-style-type: none"> <li>1. Formation, factors effecting finger prints</li> <li>2. Loss of finger prints and consideration</li> <li>3. Finger prints on documents and analysis</li> <li>4. Aged prints collection and examination</li> </ol>
<b>Unit III</b>	<p><b>Ridge Characteristics</b></p> <ol style="list-style-type: none"> <li>1. Types of Ridge Characteristics</li> <li>2. Principles of Friction Ridge Analysis</li> <li>3. Relevance of Friction Ridge Prints</li> <li>4. Elimination Prints</li> </ol>
<b>Unit IV</b>	<p><b>Fingerprint as Evidence</b></p> <ol style="list-style-type: none"> <li>1. Principle of fingerprints, Admissibility, collection and preserving</li> <li>2. IAFIS, Fingerprint images from FTIR-based optical scanner,</li> <li>3. capacitive scanner; piezoelectric scanner; thermal scanner;</li> </ol>

### Suggested readings:

1. Daluz, H. M. (2019). *Fundamentals of Fingerprint Analysis*, CRC Press, ISBN 9780367778743.
2. Federal Bureau of Investigation & Department of Justice, (2010). *The Science of Fingerprints: Classification and Uses*, Books Express Publishing, ISBN: 978-1780390345
3. Galton, F. (1892). *Finger Prints*, London: Macmillan And Co nts
4. Giuliao, A. (2016). *Fingerprint Identification Handbook*, Edizioni Minerva Medica, ISBN- 978-8877118776
5. Henry, E. R. (1900). *Classification and Uses of Finger Prints*, London: His Majesty's Stationary Office.
6. Houck, M. M., & Siegel, J. A. (2015). *Fundamentals of Forensic Science*, Elsevier Ltd., 978—12-800037-3. doi: <https://doi.org/10.1016/C2013-0-12985-6>
7. Lee, H. C. (2011). *Physical Evidence in Forensic Science*, Lawyers & Judges Pub Co; 3rd edition, ISBN-10: 1936360012, ISBN-13: 978-1936360017.
8. Nabar, B. S. (2013). *Forensic science in crime investigation*, Hyderabad, India: Asia Law House Hyderabad.
9. Sharma, B.R. (2014). *Forensic science in criminal investigation and trials*, New Delhi, India: Universal Law Publishing Co. Pvt. Ltd.
10. Tubid, P. T. (n.d.). *Dactyloscopy: Science of Fingerprint Classification and Identification*, Rex Bookstore, Inc., ISBN- 9789712320644

<b>PGDFS</b>	<b>2.3 Forensic Documents (DP33T203)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Will be able to understand evolution and functions of question document examiner</li> <li>• Will have a general understating regarding questioned documents, its characteristics in crime investigation</li> <li>• Will be able to analyze the effects of writing instruments on handwriting</li> <li>• Will have better understanding regarding things effecting documents, Neurological disease and its identification in suspects.</li> </ul>

<b>Course Code</b>	<b>DP33T203</b>
<b>PGDFS</b>	<b>2.3 Forensic Documents</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>Introduction to handwriting</b></p> <ol style="list-style-type: none"> <li>1. The mechanics of handwriting</li> <li>2. Factors influencing handwriting</li> <li>3. Natural ability, physical condition, writing situation</li> <li>4. Influence of medications writing surface, writing instrument</li> </ol>
<b>Unit II</b>	<p><b>Handwriting examination</b></p> <ol style="list-style-type: none"> <li>1. Comparison, distortion, disguise, imitation</li> <li>2. signatures, guided hand, juvenile writing</li> <li>3. computer-assisted recognition, forgery, memory,</li> <li>4. simulation, tracing, free style, auto forgery,</li> <li>5. writing lift, photographic lift, and hypnosis and handwriting</li> </ol>
<b>Unit III</b>	<p><b>Effects of the writing instrument</b></p> <ol style="list-style-type: none"> <li>1. Intersecting lines, graphology</li> <li>2. Documents and the rules of evidence</li> <li>3. The purpose of document examination</li> <li>4. Origin, production source, production process, inscription</li> <li>5. Chastity, integrity, legitimacy</li> </ol>
<b>Unit IV</b>	<p><b>Neurological disease and motor control</b></p> <ol style="list-style-type: none"> <li>1. Parkinson's disease, progressive supranuclear palsy and corticobasal degeneration</li> <li>2. Essential tremor. Multiple system atrophy</li> <li>3. Multiple sclerosis, huntington's disease</li> <li>4. Lower motoneuron disease, alzheimer's disease and dementia with lewy bodies</li> </ol>

### **Suggested readings:**

1. Angel, M., & Kelly, J. S. (2021). *Forensic Document Examination in the 21<sup>st</sup> century*, CRC Press, ISBN: 9780367251550
2. Bisesi, M. (2006). *Scientific Examination of Questioned Documents*, CRC Press, ISBN: 978-0849320446
3. Djioua M., and Plamondon, R. (2009). Studying the variability of handwriting patterns using the kinematic theory. *Human Movement Science*.
4. Girad, J. E. (2017). *Criminalistics: Forensic science in crime*, Jones and Bartlett Publishers, Inc; 4th edition, ISBN-10: 1284142612, ISBN-13: 978-1284142617.
5. Hilton, O. (1956). *Scientific Examination of Questioned Documents*, Callaghan.
6. Koppennavar, K. M. (2007). *Forensic Document Examination: Principles and Practice*, Springer Science & Business Media
7. Nabar, B. S. (2013). *Forensic science in crime investigation*, Hyderabad, India: Asia Law House Hyderabad.
8. Osborn, A. S. (1910). *Questioned Documents*, Brooklyn, New York: The Genesee Press.
9. Sharma, B.R. (2014). *Forensic science in criminal investigation and trials*, New Delhi, India: Universal Law Publishing Co. Pvt. Ltd.
10. Vastrick, T. W. (2004). *Forensic Document Examination Techniques*, Inst of Internal Auditors, ISBN-978-0894135415.



<b>PGDFS</b>	<b>2.4 Forensic Instrumentation (DP33T204)</b>
<b>Course outcomes</b>	<p><b>After successfully completing this course students</b></p> <ul style="list-style-type: none"> <li>• Will be able to understand types of instruments used in forensic investigation</li> <li>• Have a general understanding on different types of microscopes and its function in crime detection</li> <li>• Are able to comprehend the signification role of light source in crime scene</li> <li>• Will begin to think critically how different types of chromatography aid in crime investigation.</li> </ul>

<b>Course Code</b>	<b>DP33T204</b>
<b>PGDFS</b>	<b>2.4 Forensic Instrumentation</b>
<b>Unit No.</b>	<b>Contents of Unit</b>
<b>Unit I</b>	<p><b>Introduction to Forensic instrumentations</b></p> <ol style="list-style-type: none"> <li>1. Classification of Analytical Methods,</li> <li>2. Types of Instrumental Methods</li> <li>3. Calibration of Instrumental Methods</li> <li>4. Selecting an Analytical Method</li> </ol>
<b>Unit II</b>	<p><b>Magnification Systems</b></p> <ol style="list-style-type: none"> <li>1. The Lens used in microscope</li> <li>2. Compound Magnifying Systems</li> <li>3. The Comparative Microscope</li> <li>4. Refractive Index</li> </ol>
<b>Unit III</b>	<p><b>Light source in forensic investigation</b></p> <ol style="list-style-type: none"> <li>1. General Principles of light source</li> <li>2. Regions of the electromagnetic spectrum</li> <li>3. Theory of IR Absorption Spectrometry</li> <li>4. IR and UV sources</li> </ol>
<b>Unit IV</b>	<p><b>Chromatography</b></p> <ol style="list-style-type: none"> <li>1. General Description and application in forensic investigation</li> <li>2. Gas Chromatography</li> <li>3. Liquid Chromatography</li> <li>4. Thin Layer Chromatography</li> </ol>

### **Suggested readings:**

1. Anderson, N. A. (2016). *Instrumentation for Process Measurement and Control*, CRC Press, ISBN: 978-1138031951
2. Bell, S. (2019). *Forensic Science: An Introduction to Scientific and Investigative Techniques*, CRC Press, ISBN: 978-1138048126
3. Gaensslen, R. E., Kubic, T. A., Desion, P. J., & Lee, H. C. (1985). *Instrumentation and analytical methodology in forensic science*, American Chemical Society and Division of Chemical Education, Inc.
4. Garzon, R. D., & Petraco, N. (2009), *Forensic Science Laboratory Manual and Workbook*, CRC Press, ISBN: 978-1420087192,
5. Houck, M. M., & Siegel, J. A. (2015). *Fundamentals of Forensic Science*, Elsevier Ltd., 978—12-800037-3. doi: <https://doi.org/10.1016/C2013-0-12985-6>
6. Hussain, C. M., Rawtani, D., Pandey, G., & Tharmavaram, M. (2021). *Handbook of Analytical Techniques for Forensic Samples*, Elsevier Inc.
7. Jackson, G. & Verbeck, G. (2021), *Forensic Chemistry: Instrumentation and Applications*, Wiley Publication, ISBN: 9781118703533
8. Kumar, S. S. (2021). *A Textbook on Measurement and Instrumentation*, Notion Press, ISBN: 979-8885309370
9. Saferstein, R. (2017). *Criminalistics: An Introduction to Forensic Science*, Pearson, ISBN: 978-0134477596
10. Stuart, B. H. (2012). *Forensic Analytical Techniques*, Wiley Publication.

<b>PGDFS</b>	<b>PRACTICALS – II (DP33P205)</b>
<b>Course outcomes</b>	<b>After successfully completing this course students</b> <ul style="list-style-type: none"> <li>• Will be able to develop latent fingerprints through physical and chemical methods</li> <li>• Will be able to conduct fingerprint examination</li> <li>• Will be able to identify the authenticity of a document</li> <li>• Will be able to conduct TLC on inks</li> </ul>

<b>2.5</b>	<b>PRACTICALS – II</b>
<b>Course Code</b>	<b>(DP33P205)</b>
1. Recording of fingerprints	
2. Development of latent fingerprints through physical and chemical methods	
3. Identification and comparison of ridge characteristics	
4. Fingerprint classification: Henry's 10 digit classification, Single digit classification	
5. Examination of Questioned Documents through class and individual characteristics of Handwritten documents	
6. Examination of Questioned Documents through class and individual characteristics of Typewritten documents	
7. Examination of security features of currency notes and coins	
8. Distribution of inks through TLC	
9. Visit to University Instrumentation centre for observation of different scientific instruments	

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