Examination leading to Post Graduate Diploma in Forensic Science and Related Law
Scheme of Teaching and examination under semester pattern Choice Based

Appendix I
POST GRADUATE DIPLOMA IN FORENSIC SCIENCE AND RELATED LAW
SEMESTER-I

Sr. No.	SUBJECT CODE	Theory/Practical	Teaching Scheme (Hrs/week)				Examination Scheme					
			Theory	*Practical*	*Total*	*Credits*	*Exam Duration*	Marks Max			Minimum Passing Marks	
								External Marks	Internal Marks	*Total* Marks	Th	Pr
1	PGDF 1T1	Basics of Forensic Science & Crime Scene Management-I	4		4	4	3	80	20	100	40	
2	PGDF 1T2	Forensic Science and its Application in Crime Investigation-I	4		4	4	3	80	20	100	40	
3	PGDF 1T3	Trends in Forensic Science-I	4		4	4	3	80	20	100	40	
4	PGDF 1T4	Criminal Justice System and the Laws-I	4		4	4	3	80	20	100	40	
5	PGDF 1P1	Practical		8	8	4	6	80	20	100		40
		Grand total	**20**	**32#**	**48#**	**20**	**24**	**400**	**100**	**500**	**160**	**40**

Note:**# for four batches**

1 Minimum passing marks in Theory [External +Internal] combined will be 40 %.

2 Minimum passing in Practical [External & Internal] combined will be 40%

Appendix II

POST GRADUATE DIPLOMA IN FORENSIC SCIENCE AND RELATED LAW

SEMESTER-II

Sr. No.	SUBJECT CODE	Theory/Practical	Teaching Scheme (Hrs/week)				Examination Scheme					
			Theory	*Practical*	*Total*	*Credits*	*Exam Duration*	Marks Max			Minimum Passing Marks	
								External Marks	Internal Marks	*Total* Marks	Th	Pr
1	PGDF 2T1	Basics of Forensic Science & Crime Scene Management-II	4		4	4	3	80	20	100	40	
2	PGDF 2T2	Forensic Science and its Application in Crime Investigation-II	4		4	4	3	80	20	100	40	
3	PGDF 2T3	Trends in Forensic Science-II	4		4	4	3	80	20	100	40	
4	PGDF 2T4	Criminal Justice System and the Laws-II	4		4	4	3	80	20	100	40	
5	PGDF 2P1	Project Work		8	8	4	6	80	20	100		40
		Grand total	**16**	**32#**	**48#**	**20**	**18**	**400**	**100**	**500**	**160**	**40**

Note:**# for four batches**

1 Minimum passing marks in Theory [External +Internal] combined will be 40 %.

2 Minimum passing in Practical [External & Internal] combined will be 40%

DIRECTION NO. ..... OF 2022

RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY NAGPUR

FACULTY OF SCIENCE AND TECHNOLOGY

Credit Based Semester pattern

Syllabus for

PostGraduate Diploma in

ForensicScience

and Related Laws

(WitheffectfromtheAcademicYear2022-23)

P.G.Diploma in Forensic Science and Related Laws
To be implemented from AcademicYear 2022-2023

Scheme of Assessment

Theory

Assessment Type	Allocation ofMarks	Total Marks
Internal Assessment	1. Periodical Class Test 10Marks 2. Attendance andParticipation 05Mark 3. OverallConduct 05Marks	20 Marks
Semester End Examination	Question Paper Pattern- Each paper will have five questions. Break-up of each question shall be as follows: **Q.1 to Q.4**: One or two long questions from each unit. ..... 15 Marks each. (With Internal Choice) **Q.5**: Short notes/Short answer type: a), b), c) and d) (one from each unit) ..... 05 Marks each (Compulsory, Without Internal Choice)	80 Marks
Total		**100Marks**

Practical

Paper	Allocation ofMarks		TotalMarks
V	Practical Assesment For a semester I		100
	1. Long experiment	40 Marks	
	2. Short experiment	20 Marks	
	3. Practical Record	10 Marks	
	4. Viva	10 Marks	
	5. Internal Assessment	20 Marks	
V	Project - (for Semester-II)		100
	1) Project Report	60 Marks	
	2) Presentation	10 Marks	
	3) Viva-Voice	10 Marks	
	4) Internal	20 Marks	

Course Title: Basics of Forensic Science & Crime Scene Management-I

Semister I

Course Title: **Basics of Forensic Science & Crime Scene Management-I**

Course Code: PGDF1T1 Sem I, Paper-I

Level: PG

Course Objective (CO): This course will cover:

- Introduction to Forensic Science
- Basics of Crime Scene Management.
- Basics of Crime Scene Investigation.
- Types of Evidence on the Crime Scene

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: The need and scope of Forensic Science, Evidences encountered at various crime scene, development of Forensic Science, collection, preservation and evaluation of physical evidences.
- **Describe**: Crime, Crime Scene, Basics principles of Forensic Science,
- **Differentiate**: Laws and principles of Forensic Science, Collection, Preservation and Packaging of various evidences.
- **Analyze**: Various evidences.
- **Review**: Role and Importance of Forensic science in the process of investigation and justice delivery.

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, e-lectures, case study method, general discussions, MOOCs, demonstrations and interactions.

PGDF1T1: Paper I

BASICS OF FORENSIC SCIENCE &

CRIME SCENE MANAGEMENT -I

Unit-I Forensic Science-I

Introduction, definition, Basic Principles, History & Development of Forensic Science, Scope and need of Forensic Science. Case studies related to principles of Forensic Science. Definition of Crime, elements of crime, Various types of crime, Criminal behavior-cause and theories.

Unit -II Crime Scene Management -I

Defining the Scene of Crime, Crime Scene Management& its hierarchy, Role of First Responding Officers, Search Patterns of a crime scene, Crime scene Documentation, Note-Taking, Sketching Methods, Types of Sketching.

Unit -III Crime Scene Management-II

Preservation of a Crime Scene-Photography and Videography, Evidence Collection Methods, Preservation of evidence, Packaging of Evidences, Labeling & Forwarding of exhibits to Forensic Laboratories, Health & Safety Protocols.

Unit IV: Evidences-I

Crime Scene Evidences- Fingerprints, Foot prints, Lip Prints, Bite Marks and other impression evidence, Blood, Semen, Saliva, & other biological fluids, Viscera, Shoe impressions, Tool marks, Tyre marks, Hair – Animal & Human: Methods of Collection, Preliminary Examination and their Forensic Significance.

Course Title: Forensic Science and its Application in Crime Investigation-I

Course Code: PGDF1T2 Sem I, Paper-II

Level: PG

Course Objective (CO): This course will cover:

- Introduction to Fingerprints
- Introduction to Forensic Ballistics.
- Introduction to Forensic Chemistry
- Introduction to Forensic Linguistics

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: Various types and patterns of fingerprints, types questioned documents.
- **Describe**: The methods of development of latent fingerprints, types of firearms and ammunitions, types of document forgery.
- **Differentiate**: Characteristics of Fingerprints, Food adulterants, Branches of Forensic Linguistics.
- **Analyze**: Minutiae, Adulterants, Questioned documents
- **Review**: Role and Importance of Fingerprints, Forensic Ballistics, Forensic Chemistry and Questioned Document Analysis

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, flipped classroom, e-lectures, Case study method, general discussions, demonstrations, MOOCs, and interactions.

Semester-I

PGDF1T2: Paper II

FORENSIC SCIENCE AND ITS APPLICATION IN CRIME INVESTIGATION-I

Unit I: Fingerprints

Fingerprints- Definition, History, Types of Fingerprints, Patterns of Fingerprints, Classification of Fingerprints, Ten-digit fingerprint, Minutiae Identification and Matching. Development of Latent Prints, Physical Methods of Development, Chemical Methods of Development.

Unit II: Forensic Ballistics

Firearms & Their Classification, Ammunition, Projectiles, Mechanism of Firing, Bullet, Weapon & Cartridge case Identification, GSR-Detection and analysis, Nature of Firearm Injuries – Entry & Exit wounds, range of fire by shotgun, rifles and pistol.

Unit III: Forensic Chemistry

Food Adulteration and their detection. Definition of Explosion & Detonation, Chemistry of explosives, some common explosives, Improvised Explosive Devices (IEDs), Disposal, Handling, Precautions and analysis. Forensic analysis of Petroleum Products.

Unit IV: Questioned Documents

Questioned Documents- definition, types and their analysis. Handwriting and signature- analysis, identification and examination, Procedure for examination, Types of Forgery, Anonymous letter, Charred document, Indented writing.

Course Title: Trends in Forensic Science-I

Course Code: PGDF1T3 Sem I, Paper-III

Level: PG

Course Objective (CO): This course will cover:

- Introduction to Forensic Medicine
- Introduction to Medical Jurisprudence
- Introduction to Forensic Physics
- Introduction to Emerging Trends in Forensic Science

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: Various types of injuries, signs of death, new fields of Forensic Science.
- **Describe**: Post mortem report, ISO in FSLs,
- **Differentiate**: Antemortem and Post mortem injuries, Late and early signs of death, Causes of death, Accident and Hit and run
- **Analyze**: Nature of injuries, Time since death, Accident Scene, Accidental/Intentional Fall Scene
- **Review**: Role and Importance of Forensic Medicine experts, Thanatology, Forensic Physics and other emerging field of Forensics

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, Video lectures, e-lectures, general discussions, MOOCs, demonstrations and interactions.

Semester-I

PGDF1T3: Paper – III

TRENDS IN FORENSIC SCIENCE-I

Unit I: Forensic Medicine -I

Injuries: classification, forms and medico legal aspects of Injuries. Medico-legal Certificate, Post Mortem Report, Dying Declaration & Expert Testimony. Roles, responsibilities and conduct of an 'Expert'.

Unit II: Forensic Medicine -II

Death, Types of Death, Cause of Death, Post-Mortem Signs of Death, Immediate Signs, Early Signs and Late Signs of Death, Medico-legal Significance, Estimation of Time since Death

Unit III: Forensic Physics

Forensic examination of Glass, Paint- Automotive and Household, Soil, Fibres, Fabrics. Primary causes of vehicular accidents, analysis of accidents, hit and run crime scene, Speed of the vehicle, Accidental/Intentional fall scene investigation, Height of fall, Angle of impact.

Unit IV: Emerging Trends in Forensic Science

Introduction to: Digital and Cyber Crimes, Preventive Forensic, Forensic Journalism, Forensic Auditing, Virtual Autopsy, Forensic Radiology, Humanitarian Forensics, Fraud Risk Assessment, ISO in Forensic Science Laboratories.

Course Title: Criminal Justice System and the Laws-I

Course Code: PGDF1T4 Sem I, Paper-IV

Level: PG

Course Objective (CO): This course will cover:

- Introduction to Criminal Behavior.
- Introduction to some of the important wings of Criminal Justice System.
- Introduction to Acts including Criminal Procedure Code (CrPC), Indian Penal Code (IPC), Indian Evidence Act (IEA).
- Introduction to important provisions of IPC, IEA and CrPC.

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: Type of crimes, Punishments, wings of criminal justice system.
- **Describe**: Modus operandi, criminal profiling, corpus delicti.
- **Differentiate**: Various aspects as per legal procedures.
- **Analyze**: The landmark judgements, case laws and case studies.
- **Review**: Role and Importance of several sections and provisions related to various offences.

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, Video lectures, e-lectures, general discussions, MOOCs, demonstrations and interactions.

Semester-I

PGDF1T4: Paper -IV

CRIMINAL JUSTICE SYSTEM AND THE LAWS-I

Unit I: Crime and Criminal Behavior

Definition of Crime, Various types of crime, Criminal behavior- Causes of criminal behavior, Theories of crime and criminal behavior, Punishment, Theories of punishment, Forms of punishment, Modus Operandi, Criminal profiling, Corpus Delicti.

Unit II: Criminal Justice System-I

Wings of criminal justice system- Police, prosecution & judicial officers. Role of Forensic scientists and medico-legal doctors in criminal investigation. Introduction to important acts in Indian Judicial System: Indian Constitution, Indian Penal Code, Criminal Procedure Code, Indian Evidence Act, IT Act and related/relevant special Acts. Amendments and case laws. Landmark judgements and case studies.

Unit III: Criminal Justice System-II

Important Provisions of Code of Criminal Procedure- FIR, Complaint, Sec. 174, 291, 292, 293, Framing of Charges, Types of offence, summons, warrant, Investigation, perjury, inquiry and trial, Complaint and Report. Medico Legal Aspects – PM report, Dying Declaration & Expert Testimony.

Unit IV: Criminal Law

Definitions and General Exceptions under Indian Penal Code, 1860 Offences against Body (Sections 121A, 299, 300, 302, 304A, 304B, 307, 309,319, 320, 324, 326, 351, 354, 359, 362) and Offences against Property (Sections 378, 383, 390, 391, 405, 415, 420, 441, 463, 489A, 497, 499, 503, 511) Offences Relating to false evidences and against public justice (Section 191-229) Important Provisions of Indian Evidence Act, 1872- Section 32, 45, 46, 47, 57, 58, 60, 65, 65B, 73, 135, 136, 137, 159.

Semester-I

PGDF1P1: Paper -V

PRACTICAL

Note: Atleast 80% of the practical listed below should be completed.

1. Sketching the Crime Scene using Triangulation method/Baseline method.
2. Collection, packaging and forwarding of evidences collected from the crime scene.
3. Taking Plain and Rolled Fingerprints on Fingerprint Slip.
4. Taking 10-digit Fingerprint and Classifying them.
5. Development of latent fingerprints
6. Forensic examination of Footprints/Footwear impressions.
7. Microscopic examination of Hair/Pollens/Diatoms.
8. Identification of Class characteristics and Individual characteristics of handwriting
9. Forensic Examination of characteristics of Signature
10. Forensic Examination of Glass
11. Forensic Examination of Fibers & Fabrics
12. Forensic Examination of Tire marks
13. Thin Layer Chromatography for differentiation of Ink(s)/poison(s).
14. Forensic Examination of Bitemarks

Semester II

Course Title: Basics of Forensic Science & Crime Scene Management-II

Course Code: PGDF2T1 Sem II, Paper-I

Level: PG

Course Objective (CO): This course will cover:

- Role of different officers and experts involved in Crime Scene Investigation
- The history, setup and hierarchy of Forensic Science Laboratories in India.
- Types of Evidence on the Crime Scene
- Organizational set-up of Forensic Science Laboratories in India.
- Various Divisions of Forensic Science Laboratories in India.

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: The importance of scientific report, Health & safety protocols in Forensic setup.
- **Describe**: The role of Investigating Officer, Police Officers, Forensic Experts at the Scene of Crime, Role of different FSLs and their divisions.
- **Differentiate**: Modus Operandi and Corpus Delicti, the functions of various sections/divisions of FSLs.
- **Analyze**: Various evidences for their forensic significance.
- **Review**: Role and Importance of Forensic science in the process of investigation and justice delivery.

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, e-lectures, general discussions, case study method, demonstrations, MOOCs, and interactions.

Semester-II

PGDF2T1: Paper I

BASICS OF FORENSIC SCIENCE &

CRIME SCENE MANAGEMENT-II

Unit-I Forensic Science-II

Modus Operandi, Criminal profiling, Corpus Delicti. Role of investigating officers, scientific officers, Importance of scientific report, ethics in Forensic Science. Role of Police officers, medico-legal doctors. Expert Testimony. Educational Set-up of Forensic Science in India.

Unit II: Evidences-II

Establishment of Identity of Individuals, Skeletal Remains, Dental evidence, Pollens, Diatoms: Method of Collection, Preliminary Examination and their Forensic Significance.

Unit III: Forensic Science Laboratory -I

Brief History & current scenario at National & International level, Role and Functions of DFSS, Services and functionalities provided by various Forensic Science Laboratories. Organizational setup of Central Forensic Science Laboratories, State Forensic Science Laboratories.

Unit IV: Forensic Science Laboratory -II

Various divisions in Forensic Science Laboratory: General Analytical and Instrumentation, Forensic Ballistics, Forensic Biology, Forensic Chemistry, Documents Division, Forensic Physics, Forensic Psychology, Forensic Serology, Forensic Toxicology, Cyber Forensic, Tape Authentication and Speaker Identification (TASI), DNA division.

Course Title: Forensic Science and its Application in Crime Investigation-II

Course Code: PGDF2T2 Sem II, Paper-II

Level: PG

Course Objective (CO): This course will cover:

- Introduction to Fire Scene Analysis
- Introduction to Forensic Toxicology
- Introduction to Forensic Linguistics
- Introduction to Forensic Speaker Identification

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: Various types fire scenes, poisons, phonetic parameters.
- **Describe**: The components of Fire and Arson, Drugs of Abuse
- **Differentiate**: Fire and Arson, Various types of Poisons and Drugs
- **Analyze**: Fire and Arson scene, Toxicological samples, Anonymous letters, suicide notes.
- **Review**: Role and Importance of Fire/Arson Scene Investigation, Importance of Forensic Toxicology, Forensic Linguistics and Forensic Phonetics

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, Video lectures, general discussions, MOOCs, demonstrations and interactions.

Semester-II

PGDF2T2: Paper II

FORENSIC SCIENCE AND ITS APPLICATION IN CRIME INVESTIGATION-II

Unit I- Toxicological Analysis

Introduction to poison, definition, classification of poisons, Drugs of Abuse & Narcotic drugs, Forensic Toxicological examination of poisons: Opium; Dhatura; Cannabis; Barbiturates; Plant poisons; Cocaine; and Alcohol, Collection of Viscera and Extraction of poison from viscera, Forensic analysis of poisons.

Unit II - Fire Scene Analysis

Components of Fire, Fire Triangle, Difference between Fire & Arson, Fire Scene Investigation-Analysis & Interpretation of fire scenes, Fire Dynamics, Detection of Ignitable liquid residues in fire scenes, Fire Debris Analysis & Analytical Methods for detection & characterization.

Unit III - Forensic Linguistics -I

Forensic Linguistics, Definition, Branches of Forensic Linguistics, Forensic Phonetics & Phonology, Auditory Phonetics, Semantics, Morphology, Semiotics, Dialect Identification, Transcription, Language used in threatening Letters, Identification of Anonymous Letters, Suicide Notes, Psycholinguistics.

Unit IV: Forensic Linguistics -II

Forensic Speaker identification- Introduction inter speaker and intra-speaker variation, forensic Phonetics-acoustic and auditory parameter, Vocal Anatomy, speaker recognition- identification and verification, spectrograph.

Course Title: Trends in Forensic Science-II

Course Code: PGDF2T3 Sem II, Paper-III

Level: PG

Course Objective (CO): This course will cover:

- Introduction to Forensic Psychology
- Introduction to DNA Fingerprinting
- Introduction to Advance Methods of Interrogation
- Introduction to Instrumentation in Forensic Science

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: Various aspects of psychology, Various Sources of DNA, Instruments.
- **Describe**: DNA Fingerprinting, Narco-analysis, Polygraph, Brain Mapping
- **Differentiate**: Interrogation methods, Instrumentation
- **Analyze**: Techniques of DNA Fingerprinting, Modern methods of interrogation, Psychological profile of an offender.
- **Review**: Role and Importance of DNA Forensics, Non-invasive and invasive methods of interrogation, Forensic Significance of various instruments.

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, Video lectures, e-lectures, general discussions, MOOCs, demonstrations and interactions.

Semester-II

PGDF2T3: Paper -III

TRENDS IN FORENSIC SCIENCE-II

Unit I: Forensic Psychology

Psychology and Forensic Psychology, Psychology and Juveniles, Police Psychology, Historical Perspective, Forensic Psychology in India, Role of Forensic Psychologist, Assessment and Evaluation in Forensic Psychology, Psychological Autopsy, Offender Profiling, Psychological Profiling of Juvenile Offenders

Unit II: DNA Fingerprinting

DNA-Introduction, source of DNA in Forensic case work, Extraction of DNA, Techniques of DNA fingerprinting-RFLP, STR, PCR. DNA fingerprinting in paternity disputes, mass disaster and other forensic case work, legal issues in DNA fingerprinting, case study.

Unit III: Advance Methods of Interrogation

Narco-Analysis: theory, forensic significance of narco-analysis, admissibility in court, prospects, case study. **Brain Mapping**- introduction, EEG, P-3000 wave, brain mapping in Forensic Science, Limitation of technique, admissibility in court, case study. **Polygraph**: Principle and technique polygraph as forensic investigative tool, NHRC guidelines for polygraph test, case study. Other modern methods.

Unit IV: Instrumentation in Forensic Science

Principle, Working, and Forensic Applications of Microscopy: Compound Microscope, Stereo-Zoom Microscope,Comparison Microscope, SEM, TEM. Forensic Significance of Gas chromatography, UV-Visible spectroscopy, IR spectroscopy, FTIR, HPLC.

Course Title: Criminal Justice System and the Laws-II

Course Code: PGDF2T4 Sem II, Paper-IV

Level: PG

Course Objective (CO): This course will cover:

- Introduction to Special Laws.
- Introduction to Various Acts and their amendments including Mental Healthcare Act, NDPS Act, etc.
- Introduction to Various Acts and their amendments including Arms Act, Explosives Substances Act, IT Act, etc.
- Introduction to Intellectual Property Rights and related aspects.

Introduction to Provision in Law related to Sexual Offences.

Student Learning Objectives: On completion of this course the students will be able to:

- **Identify**: Different Special Acts, Provisions of Indian Constitution, Intellectual Property Rights Issues and Challenges.
- **Describe**: Intellectual Property Rights, Trademark.
- **Differentiate**: Various aspects as per legal procedures, Various Sexual Offences and perversions.
- **Analyze**: The landmark judgements, case laws and case studies.
- **Review**: Role and Importance of several sections and provisions related to various offences.

Pedagogy: The course shall be taught in active-learning mode, incorporating lectures along with relevant case studies and sections, with the help of chalk and board method, PowerPoint presentations, Video lectures, e-lectures, general discussions, MOOCs, demonstrations and interactions.

Semester-II

PGDF2T4: Paper -IV

CRIMINAL JUSTICE SYSTEM AND THE LAWS-II

Unit I: Special Laws: I

Mental Healthcare Act 2017; Food Safety and Standards Act, 2006; Narcotic Drugs and Psychotropic Substances Act 1985; Prevention of Illicit Trafficking in NDPS Act 1988; Prevention of Damage to Public Property Act 1984; Relevant Case Studies.

Unit II: Special Laws: II

Arms Act 1959; Explosive Substances Act 1908; The Drugs and Cosmetics Act 1940; Small coins (offence) Act 1971; Standards of Weight and Measures Act, 1976; Information Technology Act, 2000 with recent amendments. Relevant Case Studies.

Unit III: Special Law- III

Provisions under the Constitution of India (Articles 14, 15, 20, 21, 22, 51A); Intellectual Property Rights. Intellectual Property Rights in cyberspace- Copyright issues in cyberspace, Trademark issues in cyberspace, Computer software and related IPR Issues. Relevant Case Studies.

Unit IV: Sexual Offences

Sexual Offences - Rape, Unnatural sexual offences, Perversions. Recent Amendments in Rape Laws. Abortion, Artificial Insemination, Surrogacy, Medical Termination of Pregnancy Act 1971; Pre-Conception & Pre-Natal Diagnostic Techniques Act, 1994. Relevant Case Studies.

Semester-II

PGDF2P1: Paper -V

PROJECT WORK

Max. Marks: 100

The student, in consultation with their project guide/project supervisor, shall do the **project work** on a topic related to the syllabus mutually decided by them/allotted to them. The student is expected to carry out the detailed sample analysis/ experimental work/ Critical analysis/ Analytical study/ Exploratory research/ comparative study/ Critical review/ Comprehensive review.

The following aspects shall be covered before finalizing the topic by the project guide/supervisor:

Introduction to Research, Identification and criteria of selecting a research problem, Formulation of objectives, research plan and its components. Literature Search, Literature review, Sampling procedure. Plagiarism- Types, steps to avoid plagiarism, plagiarism detection tools. Referencing styles.

The evaluation of the student will be carried out jointly by the internal and external examiner during the project work examination.

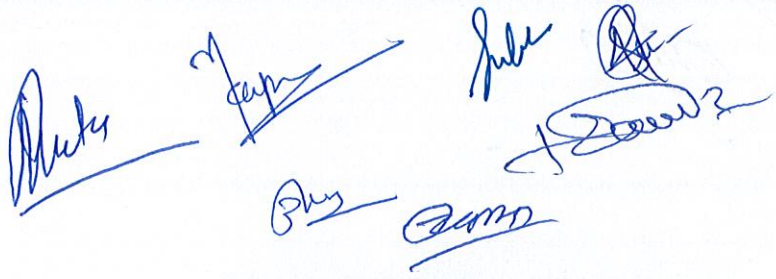
The evaluation shall be based on the following parameters:

Report	: 60 Marks
Presentation	: 10 Marks
Viva-voce	: 10 Marks
Continuous Internal Assessment	: 20 Marks

The Report shall be submitted by the student (typed and properly bound) in two copies prior to the commencement of the final practical examination of Semester II, along with the declaration by the candidate that the work is original and not submitted to any University or Organization for the award of the degree and shall be certified by the project supervisor/project guide and forwarded through Head of the Department/Course-coordinator/Director of the Institute or the Principal of the College.

List of Recommended Books & Suggested Reading:

1. Sharma, B. R. (2020). *Forensic science in criminal investigation and trials (6th edition)*. Central law agency. ISBN-10: 9388548787, ISBN-13: 978-9388548786
2. Butler, J. M. (2005). *Forensic DNA Typing: Biology, Technology, and Genetics of STR Markers* (2nd Editio). Academic Press. https://www.elsevier.com/books/forensic-dna-typing/butler/978-0-08-047061-0
3. Harralson, H. H., & Miller, L. S. (2017). *Huber and Headrick's Handwriting Identification*. CRC Press. https://doi.org/10.4324/9781315152462
4. Saferstein, R. (2017). *Criminalistics: An introduction to forensic science (12th edition)* (Vol. 201, No. 1). Upper Saddle River, NJ: Prentice Hall. ISBN-10: 0134477596, ISBN-13: 978-0134477596
5. James, S. H., & Nordby, J. J., Bell S. (2015). *Forensic science: an introduction to scientific and investigative techniques (4th edition)*. CRC press. ISBN-10: 9781439853832, ISBN-13: 978-1439853832
6. Krishnamurthy, R. (2021). Introduction To Forensic Science in Crime Investigation (3Rd edition). Selective and Scientific Book ISBN: 978-8189128272
7. Nabar, B. S. (2019). *Forensic science in crime investigation (3rd edition)*. Asia Law House. ISBN-10: 9388437691, ISBN-13: 978-9388437691
8. Girard, J. E., & Girard, J. (2017). *Criminalistics: Forensic science and crime* (3Rd edition). Jones & Bartlett Learning.
9. Bergmeyer, H. U. (Ed.). (2012). *Methods of enzymatic analysis*. Elsevier.
10. Li, R. (2021). *Forensic biology: identification and DNA analysis of biological evidence (2nd edition)*. CRC press. ISBN-10 : 1032098791, ISBN-13 : 978-1032098791
11. Modi, R. B. J. P. (2019). *A textbook of medical jurisprudence and toxicology 26th EDITION 2019 BY KANNAN*. Elsevier.
12. Parikh, C. K. (2007). *Parikh's text book of medical jurisprudence and toxicology: for classrooms and courtrooms (6th edition)*. CBS publishers and distributors. ISBN-10: 8123906757, ISBN-13: 978-8123906751
13. Houck, M. M., & Siegel, J. A. (2009). *Fundamentals of forensic science*. Academic Press.
14. Sharma, B. R. (2002). *Firearms in criminal investigation and trials*. Universal Law Publishing Company.
15. Warlow, T. (2004). *Firearms, the law, and forensic ballistics*. CRC press.
16. Hilton, O. (1992). *Scientific examination of questioned documents (revised education)*. CRC press. ISBN-10: 0849395100, ISBN-13: 978-0849395109
17. Ellen, D., Day, S., & Davies, C. (2018). *Scientific examination of documents: methods and techniques (4th edition)*. CRC Press.
18. Lentini, J. J. (2018). *Scientific protocols for fire investigation (3rd edition)*. CRC press.
19. Mathiharan, K., & Patnaik, A. K. (Eds.). (2010). *Modi's medical jurisprudence and toxicology (23rd edition)*. LexisNexis. ISBN-10: 8180381293, ISBN-13: 978-8180381294
20. Rudin, N., & Inman, K. (2001). *An introduction to forensic DNA analysis (2nd edition)*. CRC press. ISBN-10 : 0849302331, ISBN-13 : 978-0849302336
21. Embar-Seddon, A., & Pass, A. D. (Eds.). (2015). *Forensic science*. Salem Press, a division of EBSCO Information Services.
22. Buckleton, J. S., Bright, J. A., & Taylor, D. (Eds.). (2018). *Forensic DNA evidence interpretation (2nd edition)*. CRC press.



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24. Criminal Major Acts of India- Indian Penal Code 1860; Criminal Procedure Code, 1973; Indian Evidence Act 1872.
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