



M.Sc. FORENSIC SCIENCE (1 Year Program)

This Scheme is based on the ORDINANCE -14 (2) PRINCIPLE (13/05/2025), of M.P Higher Education Ministry and UGC Guidelines of NEP 2020

W. C. f. Session 2025-2026

Credit Distribution Overview

SEMESTER - I (CREDITS 22)

S.No.	Paper code	Course Component and Name of paper		Cre	dit	М	arks	Total Marks
1	FOG GG		Т	P	Total	Max. Int.	Max. Ext.	
1.	FSC-CC-31	Forensic Biology, Serology, DNA and Forensic Medicine: Theory	6	-		40	60	100
2.	FSC-PC- 31	Forensic Biology, Serology, DNA and Forensic Medicine: Practical	-	4	10	40	60	100
3.	FSC-CC- 32	Forensic Chemistry Toxicology and Pharmacology: Theory	6	-		40	60	100
4.	FSC-PC- 32	Forensic Chemistry Toxicology and Pharmacology: Practical	-	4	10	40	60	100
5.		Seminar	2	-	2	40	60	100
		Total Credits and Marks			22			500

*Abbreviations Used- Core (Major), Minor, MD: Multi/Inter-Disciplinary, AEC: Ability Enhancement, SEC: Skill Enhancement, DSE: Discipline Specific Elective, VOC: Vocational Course, VAC: Value Added Course.

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	Theo	ry Paper: Schem	e B-1 for one year PG program	
Program	Class: M.Sc. I semester	Year: 2025	Session: 2025-26	
		Subjec	t: Forensic Science	
1	Course Code	FSC-CC-31	and a second second	
2	Course Title	Forensic Biology, Serology, DNA and Forensic Medicine: Theory		
3	Course Type		Thou,	
4	Pre-Requisite (if any)			
5	Course Learning Outcome (CLO)	importance of au wound, the diffe	g of the nature and importance of cells in the human nt biological materials and their examination also stopsy, knowledge on different types of injury and rent techniques of facial reconstruction and their nce, importance of forensic Medicine.	
	Credit Value	6		
	Total Marks	Max. Marks:	Minimum Passing Marks: 40	

Total No. Of Lectures-Tutorial-Practical (in hours per week): L-T-P:

Unit	Topics	No. Of
	Definition, Meaning, and History of Histology. Cell: Definition, Theories, Classification and Significance of Cells in Forensic Science. Cell Organelles and their Functions, Difference between Eukaryotic and Prokaryotic Cell, Difference between Plant and Animal Cell. Cell Division: Definition, Types, Difference between Somatic, Germinal Cell, Totipotency and Apoptosis. Basic Concept in Brief for Anatomy and Physiology of Digestive, Respiratory, Circulatory, Skeleton, Nervous, Excretory, and Reproductive System, etc. Definition, Classification, General Properties of amin acids, proteins and carbohydrates.	
	History, Biochemistry and Genetics of ABO, Rh, Mn, and other Systems, Methods of ABO Blood Grouping (Absorption-Inhibition, Mixed Agglutination, And Absorption Elution) from Blood Stains and other Body Fluids/Stains, Determination of Secretor/Non-Secretor Status, Lewis Antigen, Bombay. Blood Spatter Pattern Identification, Identification of Menstrual and Other Stains by Various Methods. Semen: Composition, Structure of Spermatozoa, Forensic	22

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amunology: Immune System, Immune Response, Epitopes, Paratopes, Haptens d Adjuvant, Antigens and Antibodies, Antigen-Antibody Reaction. endel Ion Genetics, Genotypes, Phenotypes, Mutation, Multiple Alleles. ochemical Markers of Individuality: General Understanding, Classification of arkers, Biochemical Basis of Genetic Variation. Structure of DNA, Damage to NA, Variation in DNA, DNA as Excellent Polymorphic Marker, and Sources of NA as Forensic Evidence. Different Extraction Techniques of DNA, Basic DNA ping Techniques; RFLP, PCR, Electrophoresis, and Detection Methods. Symorphic Enzymes Typing- PGM, ESD, EAP, AK, etc., and their Forensic prificance, HLA Typing, Role of Serogenetic Markers in Individualization, ternity Disputes, etc. Infinition, Developmental History, Brief knowledge about legal procedures in arts, inquests, criminal courts and their powers, subpoenas, and oaths medical dentes. Recording of Medical Experts 'Evidence in Courts. Types of Medical Courtance, of Personal Libertification, Powerlance, of Personal Libertification, Powe	18
perts. Recording of Medical Experts 'Fyidence in Courts Types of Medical	18
ntity-Race, Sex, Age, Complexion, Features & Photographs, Anthropometric asurements etc.	
changes) and Symptoms, Manner of Death, Cause of Death, Asphyxia Death, pended Animation and Medico Legal Importance of Death. Autopsy: inition, Classification, Concepts, Objectives, Legal Formalities for Autopsy, opsy Procedure, Skin Incisions, etc. Post-Mortem Examination: Importance, the Mortem Report Format, External & Internal Examination in Brief. Viscera & Preservation. Examination of Asphyxia Death, Examination of Decomposed Mutilated Bodies. Precautions to be taken during Postmortem Examination. Tries: Definition, classification, Mechanical Injuries (Abrasion, Contusion, Practure and Dislocation of Bone/ Teeth, Incised Wounds, Chop and, Stab Wounds and Firearm Wounds), Regional Injuries, Thermal Injuries aries due to Cold and Heat), Chemical Injuries, Miscellaneous Injuries. Inco-Legal Aspects, Post Mortem& Ante Mortem Wounds, General racteristics of injuries from Burns, Scalds, Lightning, Electricity and ation. Ancient legal medicine practices: Injury classification; Abhighata, and Chinna, Bhinna, etc. Cause and manner of death analysis (Morrey).	18
	pended Animation and Medico Legal Importance of Death, Asphyxia Death, pended Animation and Medico Legal Importance of Death. Autopsy: inition, Classification, Concepts, Objectives, Legal Formalities for Autopsy, opsy Procedure, Skin Incisions, etc. Post-Mortem Examination: Importance, Mortem Report Format, External & Internal Examination in Brief. Viscera & Preservation. Examination of Asphyxia Death, Examination of Decomposed Mutilated Bodies. Precautions to be taken during Postmortem Examination. Preservation, classification, Mechanical Injuries (Abrasion, Contusion, Practure and Dislocation of Bone/ Teeth, Incised Wounds, Chop and, Stab Wounds and Firearm Wounds), Regional Injuries, Thermal Injuries arises due to Cold and Heat), Chemical Injuries, Miscellaneous Injuries. Injuries of injuries from Burns, Scalds, Lightning, Electricia.

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TextBooks, ReferenceBooks, Other Resources

Suggested Readings:

- 1. Albert S., Bray B. Lewis D, Roberts K. & Watson J.D. (1989). Molecular Biology of Cell. New York, Garland Pub.
- 2. Ball S., (1991). Environmental Law The Law and Policy relating to Protection of Environment. India, Universal Law Pub Co, Delhi.
- 3. Biology Methods Manual (1978). London, Metropolitan Police Forensic Science Laboratory Pub.
- 4. Catts E.P. & Haskell N.H. (1990). Entomology and Death: A Procedural Guide. London, Joyce's Print Shop.
- 5. Clifford &B.J.(1971). The Examination and Typing of Bloodstains in the Crime Laboratory. USA, US Court Printing Press.
- 6. Edwin & Caney H. M. (1993). Human Genetics: The Molecular Revolution. London, Jones & Bartlett Pub.
- 7. Gardner E.J., Simmons M. I. &SnustadD.P.(1991). Principles of Genetics. New York, John Wiley.
- 3. Jason P. J. & Simpson K. (2014). Simpson's Forensic Medicine, NY, CRC Press.
- 9. Mallet X. (2014). Advances in Forensic Human Identification. NY, CRC Press.
- 10. Modi J.S. (2011). Medical Jurisprudence and Toxicology, India, Law Publishers.
- 1. Molina D. K., & M.D. (2009). Handbook of Forensic Toxicology for Medical Examiners. USA, CRC Press.

Continuous Comprehensive Evaluati		40 Univ	versity Exam (UE): 60
In ernal Assessment	Marks	External Assessment	Marks
Mil-Semester Test (MST)	20	Term End Exam	60
Teacher Assessment* (TA) and Class attendance	20		
Total	40		60

Teacher Assessment* Presentation/Assignment/Quiz/Group-Discussion etc.

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	The	eory Paper: Scheme	e B-1 for one year PG program
Program	Class: M.Sc. I semester	Year: 2025	Session: 2025-26
		Subjects	Forensic Science
1	Course Code	FSC-PC- 31	2 orense science
2	Course Title	Forensic Biology,	Serology, DNA and Forensic Medicine: Practical
3	Course Type		Tuctical .
4	Pre-Requisite (if any)		
5	Course Learning Outcome (CLO)	by half samples, id	ut Blood/ blood group examination, origin of species entification of fibres by physical and chemical pic examination of pollen and diatoms.
	Credit Value	4	
	Total Marks	Max. Marks: 100	Minimum Passing Marks: 40

Total No. Of Lectures-Tutorial-Practical (in hours per week): L-T-P:

1 Primary and G. G.	No. of
1. Primary and Confirmatory Examination of Blood/ Semen Samples.	Lectures
Coopic Examination of Seminal Ctains C. 11 D.	
3. Identification of Species from the Hair Sample.	
F. Examination of Fiber by Physical and Chamical M. d.	
The species from Blood Committee	
. Detection & Examination of Salivam, Ctair	
. Draw and label the bones of the human by the	
. Determination of Age and Sex of a Parson from I	
. Determination of Aug and Cay of a Dame C	
0. Recording of Rite Marks by Cost	
of Dic Marks DV Casting & their Dhate 1	1
0. Recording of Bite Marks by Casting& their Photography. 1. Collection and Identification of Pollen Grains, Diatoms of Forensic Importance. 2. Examination of Lip Prints.	

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Textbooks, Reference Books, Other Resources

Suggested Readings:

- 1. Albert S., Bray B. Lewis D, Roberts K. & Watson J.D. (1989). Molecular Biology of Cell. New York, Garland Pub.
- 2. Ball S., (1991). Environmental Law The Law and Policy relating to Protection of Environment. India, Universal Law Pub Co, Delhi.
- 3. Biology Methods Manual (1978). London, Metropolitan Police Forensic Science Laboratory Pub.
- 4. Catts E.P. & Haskell N.H. (1990). Entomology and Death: A Procedural Guide. London, Joyce's Print Shop.
- 5. Clifford &B.J.(1971). The Examination and Typing of Bloodstains in the Crime Laboratory. USA, US Court Printing Press.
- 6. Edwin & Caney H. M. (1993). Human Genetics: The Molecular Revolution. London, Jones & Bartlett Pub.
- 7. Gardner E.J., Simmons M. I. &SnustadD.P. (1991). Principles of Genetics. New York, John Wiley.
- 8. Jason P. J. & Simpson K. (2014). Simpson's Forensic Medicine, NY, CRC Press.
- 9. Mallet X. (2014). Advances in Forensic Human Identification. NY, CRC Press.
- 10. Modi J.S. (2011). Medical Jurisprudence and Toxicology, India, Law Publishers.
- 11. Molina D. K., & M.D. (2009). Handbook of Forensic Toxicology for Medical Examiners. USA,CRC Press.

Keyword/Tag: DNA, Injuries, Genetics, Post-Mortem

Suggested Continuous Evaluation Methods:

Maximum Marks: 100

Continuous Comprehensive Evaluation (CCE): 40 University Exam (UE): 60

nternal Assessment	Marks	External Assessment	Marks
Assessment* (TA) and Class Attendance	40	Term End Exam	60
otal	40		60

Teacher Assessment* Demonstration/Viva-Voce/Lab record etc.

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	Theo	ry Paper: Schem	e B-1 for One Year PG program	
Program	Class: M.Sc. I semester	Year: 2025	Session: 2025-26	
		Subject	t: Forensic Science	
1	Course Code	FSC-CC- 32		
2	Course Title	Forensic Chemistry Toxicology and Pharmacology: Theory		
3	Course Type			
4	Pre-Requisite (if any)			
5	Course Learning Outcome (CLO)	body and differe importance of at wound, the diffe	g of the nature and importance of cells in the human ent biological materials and their examination also atopsy, knowledge on different types of injury and rent techniques of facial reconstruction and their nce, importance of forensic Medicine.	
5	Credit Value	6		
7	Total Marks	Max. Marks: 100	Minimum Passing Marks: 40	

Total No. Of Lectures-Tutorial-Practical (in hours per week): L-T-P:

Unit	Topics	No. Of Lectures
I	Introduction, Concept, and Significance. Poisons: Definition, Classification of Poisons, Types of Poisoning, Mode of Action, Factors Modifying the Action of Poisons, Toxicological Exhibits in Fatal and Survival Cases, Their Preservation, Treatment in Cases of Poisoning, Analysis Report. General Study and Analysis 14 Alkaloids: Definition, Classification, Isolation and General Characterization. Vegetable Poison: General Studies and Analysis of Some Vegetable Poisons, Opium, Abrus, cyanogenetic Glycosides, Dhatura, Marking Nuts, Nux-Vomica, Oleander Aconite, etc. Ancient classification of Poison: Sthavara (plant-based), Jangama (animal based), Krtrima (artificial/compound poisons) Traditional detoxification and antidotes: Agada (antidote formulations) Vamana (emesis), Virechana (purgation), Swedana (sweating) therapeutic detox protocols	14

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II	Extraction, Isolation and Clean-Up Procedures- Extraction of Non-Volatile	
	Organic Poison, Stas-Otto, Dovbriey Nickolls(Ammonium Sulphate) Method,	22
	Acid Digest and Valov (Tungstate) Methods, Solid Phase Micro-Extraction	
	Techniques, Solvent Extraction Methods, Volatile Poisons: Industrial Solvent Acid	1
	and Basic Distillation. Toxic Cations: Dry Ashing and Wet Digestion Process.	
	Toxic Amons. Diarysis Method, Total Alcoholic Extract	
III	Barbiturates, Methaqualone, Hydromorphine Methadone Monrohamata	18
	Wiescaline, Amphetamines, LDS, Heroin Cannabinoids Phinothicaines	10
	insecticities. Types, General Methods for their Analysis III Metallic Doisons.	
	Asseme, Mercury, Lead, Bismuth, Copper Aluminium Iron Rarium Zing Cooley	
	venonis and Other Animal Poisons Irrespirable Gases etc. Phormacological	
	Studies. Absorption, Distribution, Metabolism, Pathways of Drug Metabolism	
-	Tharmacodynamics: Introduction, Nature & Scope	
V	Forensic Chemistry and its Scope, Analysis of Beverages: Alcohol and Non	
	Alcoholic, Country Made Liquor etc. Adulterated food material Drugs of Abuser	18
	muduction, Classification, Narcotic Drugs & Psychotropic Substances	
	Sampling, Specific Drug types (Cannabis, Heroin, Cocaine, Amphetamine) Drugs	
	of Abuse in Sports. Brief Introduction to Drugs and Cosmetic Act Excise Act	
	NDPS Act. An Overview of Clandestine Laboratories. Recent Advancement in	
	Drugs: Rave Drugs, Drug Designing, Doping, Drug Discovery Program	
7	Structural Modification in Drugs, and Drug Monitoring Agencies	
1	Examination of Petroleum Products: Distillation &Fractionation, Various	18
	Fractions and their Commercial Uses. Standard Methods of Analysis of Petroleum	
	Products for Adulteration. Trap Cases: Purpose, Examination of Chemicals Used	
	in Trap Case. Classification of explosives and their Examination. Examination of	
	Building Materials: Types of Cement and their Composition, Determination of	
	Adulterants by Physical, Chemical and Instrumental Methods, Examination of	
	Brick, Analysis of Cement Mortar and Concrete, Analysis of Gold and Other Metals in Cheating Cases.	
	Keywords/Tags: Toxicology, Poison, Drug, Examination	
-	100 regs. Toxicology, 1 olson, Drug, Examination	

Textbooks, Reference Books, Other Resources

Suggested Readings:

- Aggrawal A. (2016). Textbook of Forensic Medicine and Toxicology. India, Avichal Publishing Company.
- 2. Bardale R. (2011). Principles of Forensic Medicine & toxicology. India, Jaypee Brothers Medical Publishers (P) Ltd.
- 3. 3. Krishan V. (2014). Textbook of Forensic Medicine & Toxicology: Principles & Practice.UK, Elsevier Health Sciences.
- 4. Modi J.S. (2011). Medical jurisprudence and Toxicology. India, Law Publishers. 8. Jason P. J. & Simpson K. (2014). Simpson's Forensic Medicine, NY, CRC Press.

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- 5. Chatwal and Anand. (2016). Instrumental Methods of Chemical Analysis. India, Himalaya Publishing House Pvt. Ltd.
- 6. Churáček J. (1993). Advanced Instrumental Methods of Chemical Analysis. Michigan, E. Harwood,
- 7. 7. Dean J. A. (1995). Analytical Chemistry Handbook. USA, McGraw Hill Inc

Continuous Comprehensive Evaluati	on (CCE)	: 40 U	niversity Exam (UE): 60
Internal Assessment	Marks	External Assessment	Marks
Mid-Semester Test (MST)	20	Term End	60
Teacher Assessment* (TA) and Class attendance	20	Exam	
Total	40		60

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Subject: Forensic Science	Class: M.Sc. I Semester	Year: 2025	Session: 2025-26		
1	Course Code	FSC-PC- 32			
2	Course Title	Forensic Chemistry Toxicology and Pharmacology: Practical			
3	Course Type				
4	Pre- Requisite (if any)				
5	Course Learning Outcome (CLO)	Understanding about Insecticides and Pest of Metallic Poisons f	different Vegetable Poisons, Extraction Identification of icides, Identification of Drugs/ Toxicants, Identification from Viscera.		
,	Credit Value	4			
	Total Marks	Max. Marks: 100	Minimum Passing Marks: 40		

Total No. Of Lectures-Tutorial-Practical (in hours per week): L-T-P:

Topics	No. of
1 dentification of Commun. Planting	Lectures
1. dentification of Common Plants i.e., Calotropis, Cannabis, Dhatura, Nux-Vomica,	
Marking Nut, Abrus precatorius, Opium Poppy etc. by physical Examination and Color Test.	
2. Identification of Different Vegetable Poisons by Thin Layer Chromatography etc. 3. Extraction and Identification of Insecticides and Pesticides by Colour Test/TLC. 4. Extraction and Identification of Drugs/ Toxicants from Biological Matrix and their	
Delection.	

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- 5. Identification of Salts and Metals by Simple Color Test in Case of Metallic Poisoning.
- 6. Extraction and Identification of Metallic Poisons from Viscera Using Dry Ashing Method Followed by Reinsch's Test.
- 7. Preliminary & Confirmatory Examination of Chemicals Used in Trap Cases.
- 8. Preliminary & Confirmatory Examination of the Chemicals Seized in Case of Acid Attack.
- Estimation Analysis of Petroleum Products using different methods like Density, Viscosity, etc.
- 10. Detection of Adulterants in Cement Samples.
- 11. Determination of Percentage of Proof Sprit of Ethyl Alcohol in Illicit Liquor by UV-VIS Spectrophotometry.
- 12. Separation and Identification of Volatile Liquid by Simple Distillation.
- 13. Preliminary Examination Black Powder.

Keyword/Tags: Toxicology, Poison, Drug, Examination

TextBooks, ReferenceBooks, Other Resources

Suggested Readings:

- . Aggrawal A. (2016). Textbook of Forensic Medicine and Toxicology. India, Avichal Publishing Company.
- 1. Bardale R. (2011). Principles of Forensic Medicine & toxicology. India, Jaypee Brothers Medical Jublishers (P) Ltd.
- 3 Krishan V. (2014). Textbook of Forensic Medicine & Toxicology: Principles & Practice. UK, I Isevier Health Sciences.
- 4 Modi J.S. (2011). Medical jurisprudence and Toxicology. India, Law Publishers.
- 5 Khandpur R.S. (2004). Handbook of Analytical Instruments. USA, Tata McGraw Hill Pub. Co.
- 6 Khanna D.R. &Gulati H.R. (2002). Fundamentals of Optics Geometrical Physical & Quantum. India, R. Chand & Co.
- 7. Patania V.B. (2004). Spectroscopy. India, Campus Books International.
- 8. Robinson J.W. (1996). Atomic Spectroscopy, Revised & Expanded. NY, Marcel Dekkar, Inc.

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Suggested Continuous I Maximum Marks: 100 Continuous Comprehen			versity Exam (UE): 60	
Internal Assessment	Marks	External Assessment	Marks	
Internal Test, Teacher Assessment* (TA) and Class Attendance	40	Term End Exam	60	
Total	40		60	

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Internship/ Apprenticeship/ Seminar (2 Credits)

	The	ory Paper: Scher	ne B-1 for Two-year PG program	
Program	Class: M.Sc. I semester	Year: 2025	Session: 2025-26	
Suggested	Continuous Ex	valuation Method	ls:	
	Marks: 100 ninar: Internal	Evaluation only		

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Session 2025-2026

Credit Distribution Overview

SEMESTER - II (CREDITS 22)

S. No.	Paper code	Course Component and Name of paper	Course Type	Credit	Marks		
1.	FSC-CC-41	Passaval TV			Internal Examination Marks (40%)	University Examinatio n Marks (60%)	Total Marks
1.	150-00-41	Research Thesis/ Project/ Patent	Core	22	200	300	500
		Grand Total		22			500

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