



Value Added Courses Offered

Department : **Forensic Science**

Academic Year : **2023-24**

List of Value Added Courses

Sr. No.	Course Code	Name of the Course
01.	MDCFS01	Crime against women
02.	MDCFS02	Cyber Crime
03.	VACFS01	Forensic Science and Society
04.	VACFS02	Criminal Law and Police Science
05.	SECFS01	Handwriting Identification and recognition
06.	SECFS02	Forensic Radiology
07.	SECFS03	Wildlife Forensic

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Department of Forensic Science
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Minutes of Meetings (MoM) of Board of Studies (BoS)

Department of Forensic Science

Minutes of the Meeting of Board of Studies

A meeting of the Board of Studies of Department of Forensic Science was held in the faculty room of the Department on 27/06/2024 at 11:00 AM in Hybrid Mode mode (Google Meet).

Following members were present in the meeting

Prof. Naveen Kumar Vishvakarma, Head (I/C)	Chairman of BoS
Prof. Manoj Kumar Pathak	Member & External Subject Expert (Present Online)
Dr. Sunanda Denge	Member & Industrial Expert (Present Online)
Dr. Ajay Amit	Member

Following members were also invited in BoS meeting to contribute in process of syllabus framing/revision

Dr. Chanachal Kumar	Assistant Professor
Ms. Blessi Uikey	Assistant Professor

At the start, Chairman of the BoS welcomed all the members.

Thereafter following agenda was taken up.

Agenda: To approve and revise the syllabus of B.Sc. and M.Sc. course of the department for academic session 2024-25

In the syllabus of B.Sc. as per NEP 2020, two Multi-Disciplinary Courses (**MDC**) [(1) Crime against Women, (2) Cyber Crimes], Two Values added Course (**VAC**) [(1) Forensic Science and Society (2) Criminal Law and Police Science], and Three Skill Enhancement Courses (**SEC**) [(1) Handwriting Identification and recognition, (2) Forensic Radiology, (3) Wildlife Forensic] were proposed. These courses are not linked with any specific semester. Course Code will be as per University Guideline.

The content was discussed among present members and minor changes were suggested.

In the M.Sc., syllabus revisions were proposed. Department of Forensic Science offers open elective course in Third sem. Now, the same open elective course will be offered in first sem of M.Sc. for the batch admitted in session 2024-2025. This is required to align other department's Scheme offering open elective in first sem. This will enable students to get more option for open elective.

In the fourth sem of the M.Sc. revision of the scheme was discussed. It was discussed that in fourth semester, only one course (Dissertation) will be offered. This revision will be implemented for the academic session 2023-2024. This will strengthen the quality of research dissertation and experiential learning of the students. A list of identified SWAYAM MOOC courses was also proposed.

Resolution: All revisions proposed were discussed among members present, and were approved after incorporation of suggestion. A list of identified SWAYAM MOOC courses was also proposed approved.

Meeting ended with vote of thanks by chairman of BOS to all members present.


27/6/2024

(Present Online)

(Present Online)

Dr. Ajay Amit

Prof. Manoj Kumar Pathak

Dr. Sunanda Denge

Prof. Naveen Kumar Vishvakarma

Member

External Subject Expert

Industrial Expert

Chairman


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Scheme and Syllabus

Department of Forensic Science: Multi-Disciplinary Courses (MDCD) and Value Added Courses (VAC)
as per NEP 2020 for Undergraduate courses

- Multidisciplinary Course: Crime against Women
- Course Code : MDCFS01
- No. of Credits : 3 (Theory)
- Examination Pattern: As per university regulation
- Total Marks : 100
- No. of Teaching Hours : 45

MDCFS01: Crime against Women

Course Objective- The objective of this course is to introduce to students about various crimes in society against women, different laws, provisions for prevention of crime and preventive measures.

UNIT I: Basic Introduction: Status of women from Vedic to modern time, Women, crime and criminal justice system, theories of gender-based violence, Indian scenario of crime against women.

UNIT II: Types of Crime: Common crimes against women, Domestic violence, Rape, dowry death, Sexual harassment, Work place crime, outraging the modesty of a women, stalking, vitriolage/acid attacks, trafficking of women and girls etc.

UNIT III: Cybercrime against women, Cyber stalking, cyber voyeurism, pornography, cyber impersonation, Cyber bullying etc.

UNIT IV: Laws and Acts: Crimes identified against women and relevant special Laws, Overview of various preventive acts, The immoral Traffic (Prevention) Act, Dowry Prohibition Act, Protection of Women from domestic Violence Act etc.

UNIT V: Overview of Gender and Law, Women and victimization, Gender justice and law, International Human Rights and gender, Role of Police, Role of justice system, Role of society for gender justice.

Course outcomes: After studying this paper students will able to learn

CO1	Gain basic knowledge about the actual scenario of crime against women.
CO2	Different types of crime against women and understand its multifarious dimensions.
CO3	Analysis and imply different laws related to crime against women.
CO4	Understand and analysis the roles of various organizations to prevent crime against women.

Suggested readings

1. Stacy L. Mallicoat. 2012. Women and Crime: A Text/Reader. Los Angeles: Saga Publications.
2. Bonnie, S. Fisher & Steven P. Lab (2010). Encyclopedia of Victimology and Crime Prevention SAGE Publications, Inc.
3. Tara, N. Richards, Catherine D. Marcum (2015). Sexual Victimization: Then and Now. SAGE Publications, Inc.
4. Fitz-Gibbon, K. & Walklate, S. (2018). Gender, Crime and Criminal Justice, Routledge, ISBN: 9781138656376.
5. Mukharjee, S. K. & Scutt, J. A. (1981). Women and Crime, Routledge, ISBN: 9781138186569.
6. Britton, D. M. (2011). The Gender of Crime, Rowman & Littlefield.
7. Evans, K & Jamieson, J. (2008). Gender and Crime: A Reader, Open University Press.
8. Silvestri, M. & Crowther-Dowey, C. (2008). Gender and Crime (A Key Approach to Criminology), SAGE Publications.
9. Edelston, C.D. & Wicks, R.I. (1977), An Introduction to Criminal Justice, McGraw Hill.

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Department of Forensic Science: Multi-Disciplinary Courses (MDCD) and Value Added Courses (VAC)
as per NEP 2020

Multidisciplinary Course: Cyber Crimes

- Course Code : MDCFS02
- No. of Credits : 3 (Theory)
- Examination Pattern: As per university regulation
- Total Marks : 100
- No. of Teaching Hours : 45

MDCFS02: Cyber Crimes

Course Objective: The objective of this course is to introduce students with fundamentals of computer system, networking, and various classical and emerging cybercrimes in society, its investigation, preventive measures and awareness among society.

UNIT-I: Introduction of Computer: Basic of computer system, Types of Software, Operating System and their types, digital and cyber evidence collection and preservation.

UNIT-II: Overview of Computer network: Types of computer network: LAN, MAN, WAN, Overview of Internet, Benefits and drawbacks of internet, Introduction to AI and ML.

UNIT -III: Cyber Security Basics: Introduction to Cyber Crimes, Classification of Cyber Crime, Security Principle, Reasons for Commission of Cyber Crimes, Data Breach, Data frauds, Analysis of Crimes Incident Handling.

UNIT-IV: Cyber Attack and their Classification: Cyber Stalking, Child Pornography, Forgery and Counterfeiting, Software Piracy and Crime related to IPRs, Cyber Terrorism, Cyber bullying, Cyber Staking, Phishing, Computer Vandalism, Spamming, and Different types of attack, different types of mobile crimes, Role of Social media in cyber crimes.

UNIT-V: Preventive measures: Bio-metric Authentication methods, safe browsing, Tips for buying online, Tips for using Social Networking platforms safely, sharing online contents, Using Instant Messaging Application Events and communities.

Course outcomes: After studying this paper students will able to learn

CO1	Basics of computer hardware and cyber space.
CO2	Understand the basics of cyber security and cyber crimes.
CO3	Classification of various cyber and mobile crime and its investigation techniques.
CO4	Various Information Technology acts and preventive measure to reduce cyber crimes.

Suggested Readings:

1. Relevant sections of Information Technology Act 2000.
2. Esharenana, Adoni, Frame works for ICT Policy Government, Social and Legal Issues. Information Science Reference, Harsey, New YORK.
3. Robert C. Newman, Computer Forensics: Evidence Collection and Management Auerbach Publications.
4. Eoghan Casey, Handbook of Computer Crime Investigation: Forensic Tools and Technology, Academic Press
5. Clark, Franklin, and Diliberto, Ken, (1996). Investigating computer Crime, CRC Press, Boca Raton, Florida, USA
6. Tewari, R.K., Sastry, P.K. and Ravikumar, K.V. (2003): Computer Crime & Computer Forensics, Select Publisher, New Delhi.
7. Lang, David L., (2002). Introduction to Computer forensics, CRC Press LLC, Boca Raton, Florida, USA
8. Middleton, Bruce (2001). Cyber Crime Investigator's Field Guide, CRC Press
9. Vacca John R; Computer Forensics, Computer Crime Scene Investigation, Firewall Medial, An imprint of Laxmi Pub. (2002)

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Department of Forensic Science: Multi-Disciplinary Courses (MCDC) and Value Added Courses (VAC)
as per NEP 2020

Value Added Course: Forensic Science and Society

- Course Code : VACFS01
- No. of Credits : 2 (Theory)
- Examination Pattern: As per university regulation
- Total Marks : 100
- No. of Teaching Hours : 30

VACFS01: Forensic Science and Society

Course Objective: The objective of this course is to introduce students about the concept of penology, crime and types of crime occurring in society, causative factors of crime and general awareness.

Unit I: General introduction: History of penology, Crime and its definition, Social relations and criminality, Typology of crime, Methodology of crime.

Unit II: Social crimes: Crime against women, Crime against children, Crime against elderly peoples, Drug of abuse (Prevention and consequences), Alcoholism, Terrorism, Socio-economic discrimination.

Unit III: General Forensic awareness: Reporting of crime, crime scene preservation, Evidences and its type, Media biasing, right to information, Basic of policing.

Unit IV: Criminal psychology and society: Identification of criminal behaviour, Human aggression, Intentional and non-intentional crimes, Crime and mental disorders, psychological counselling and its importance.

Unit V: Forensic ethics and crime: Understanding the social value in forensic investigation, Role of social values in crime. Awareness against superstition, Responsible use of social media, Role and responsibility of an individual in society.


Learning outcomes: After studying this paper students will able to learn

CO1	Fundamentals and principles of forensics science and its significance to the society.
CO2	Various crimes and causative theories of crime in society.
CO3	Legal aspects of forensic psychology and use in personal identification.
CO4	Various tests performed for the evaluation and assessment of mental status of a criminal.

Suggested Readings:

1. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton (2005).
2. R. Saferstein, Criminalistics, 8th Edition, Prentice Hall, New Jersey(2004).
3. J.L. Jackson and E. Barkley, Offender Profiling: Theory, Research and Practice, Wiley,Chichester (1997).
4. R. Gupta, Sexual Harassment at Workplace, LexisNexis, Gurgaon(2014).
5. Paranjape, N.V. Criminology and Penology, Central Law Publication, Allahabad.
6. William Bailey, The Encyclopedia of Police Science, Second Edition Garland publishing,INC, London.
7. Suderland,E.Hand Donald R. Cressy; The Principals of Criminology, The Times of India Press, Bombay,1968
8. Ahuja, Ram Criminology, Rawat Publication, Jaipur
9. Wayne Petherick, Brent Turvey, Claire Ferguson, Forensic Criminology, Academic PressDonald, J. (1992), The Police Photographer's Guide, Photo Test Books, Arlington Heights.

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Department of Forensic Science: Multi-Disciplinary Courses (MDC) and Value Added Courses (VAC)
as per NEP 2020

Value Added Course: Criminal Law and Police Science

- Course Code : VACFS02
- No. of Credits : 2 (Theory)
- Examination Pattern: As per university regulation
- Total Marks : 100
- No. of Teaching Hours : 30

VACFS02 : Criminal Law and Police Science

Course Objective: The objective of this course is to introduce students about the concept of penology, crime and types of crime occurring in society, causative factors of crime and general awareness.

Unit 1: - Basic Introduction: Defining criminal conduct and its basics, steps in criminal justice system, Understanding *Corpus delicti* and *Modus operandi*. Crime: Elements, nature, causations and consequences of crime, theories of punishment, sentencing and punishment.

Unit 2: -Relevant section related to punishment: Introduction towards Relevant laws and Act, Offences against person, offences against property, and their Amendments.

Unit 3: -Relevant section related to Criminal procedures: Introduction towards Relevant laws and Act, Relevant sections and their Amendments.

Unit 4: - Relevant sections related to evidence collection: Introduction towards Relevant laws and Acts, Relevant sections and their Amendments.

Unit 5: - Police Science: Definition and scope, Organizational set up of Police at State, Range and District level. State armed forces and home guards. Duties and powers of Police, Role of Police in crime investigations. State criminal investigation departments, FIR, Police dogs. Services of crime laboratories. Basic services and optional services, Role and responsibility of an individual in society towards prevention of crime.


Learning outcomes: After studying this paper students will able to learn

CO1	Various elements and steps involved in criminal procedures related to forensic science.
CO2	Application of various relevant laws and acts related to criminal procedure, punishment and evidences during investigation.
CO3	Various acts governing socio-economic crimes.
CO4	Fundamental of police science its role, duties and powers during forensic investigation.

Suggested Readings

1. D.A. Bronstein, Law for the Expert Witness, CRC Press, Boca Raton (1999).
2. Vipa P. Sarthi, Law of Evidence, 6th Edition, Eastern Book Co., Lucknow (2006).
3. A.S. Pillia, Criminal Law, 6th Edition, N.M. Tripathi Pvt Ltd., Mumbai (1983).
4. R.C. Nigam, Law of Crimes in India, Volume I, Asia Publishing House, New Delhi (1965).
5. (Chief Justice) M. Monir, Law of Evidence, 6th Edition, Universal Law Publishing Co. Pvt.Ltd., New Delhi (2002).
6. Bayer Acts of Indian Penal Code, Criminal Procedure Code and Indian Evidence Act.
7. Turrey B; Criminal Profiling - An Introduction to Behavioral Evidence Analysis, Acad.Press Lond
8. Paranjape, N.V. Criminology and Penology, Central Law Publication, Allahabad.
9. William Bailey, The Encyclopedia of Police Science, Second Edition Garland publishing, INC, London.
10. Suderland, E. Hand Donald R. Cressy; The Principals of Criminology, The Times of India Press, Bombay, 1968
11. Reid, Sue Tithus, Crime and Criminology, The Dryden Press, Illions
12. Ahuja, Ram Criminology, Rawat Publication, Jaipur
13. Suderland, E.H.; White Collar Crime, The Dryden Press, Newyork
14. Wayne Petherick, Brent Turvey, Claire Ferguson, Forensic Criminology, Academic Press 15. Donald, J. (1992), The Police Photographer's Guide, Photo Test Books, Arlington Heights

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Department of Forensic Science: Multi-Disciplinary Courses (MDC) and Value Added Courses (VAC)
as per NEP 2020

Skill Enhancement Course: Handwriting Identification and recognition

- Course Code : SECFS01
- Total Marks : 100
- No. of Credits : 3 (Theory)
- No. of Teaching Hours : 45
- Examination Pattern: As per university regulation

SECFS01: Handwriting Identification and recognition

Unit 1: Handwriting Identification

Basis of handwriting identification, Characteristics of handwriting – scope and application, class and individual characteristics. Arrangement, alignment, margin, slant, speed, pressure, spacing, line quality, embellishments, movement and pen lifts. Factors influencing handwriting – physical, mechanical, genetic and physiological.

Unit 2: Handwriting Examination

Basis of handwriting comparison, Collection of handwriting samples, Forgery detection, Counterfeiting, Examination of altered and erased documents. Tools used in handwriting examination.

Unit 3: Handwriting Recognition

Basis of handwriting recognition, off-line and on-line handwriting recognition. Steps involved in handwriting recognition – pre-processing, feature extraction and classification. Application of handwriting recognition.

Unit 4: Basic tools for examination of Documents

Application of basic tools for the examination of Questioned Document, Ultraviolet, Visible and Fluorescence Spectroscopy. Photomicrography, Video Spectral Comparator, Electrostatic Detection Apparatus.

Course outcome: After studying this paper student will able to learn

CO1	The importance of examining questioned documents in criminal cases.
CO2	The tools required for examination of questioned documents.
CO3	The significance of comparing handwriting samples.
CO4	The importance of detection frauds and forgeries by analyzing questioned documents.

Suggested Readings

1. O. Hilton, Scientific Examination of Questioned Documents, CRC Press, Boca Raton(1982)
2. A.A. Moenssens, J. Starrs, C.E. Henderson and F.E. Inbau, Scientific Evidence in Civil and Criminal Cases, 4th Edition, Foundation Press, New York (1995)
3. Albert S. Osborn; Questioned Documents, 2nd Edition, Universal Law Pub., Delhi.
4. Wilson R. Harrison; Suspected Documents and their Scientific Examination.
5. Saferstein, Criminalistics: An Introduction to Forensic Science. Prentice, Hall.
6. Sharma, B.R.: Forensic Science in Criminal Investigation and Trials, Central Law Agency, Allahabad, 1974.

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Department of Forensic Science: Multi-Disciplinary Courses (MCDC) and Value Added Courses (VAC)
as per NEP 2020

Skill Enhancement Course: Forensic Radiology

- Course Code : SECF502
- No. of Credits : 3 (Theory)
- Examination Pattern: As per university regulation
- Total Marks : 100
- No. of Teaching Hours : 45

SECF502: Forensic Radiology

Unit 1: Introduction to Forensic Radiology

Definition, Historical aspects, Scope of forensic radiology.

Unit 2: Techniques applied in Forensic Radiology

X-Ray, Ultrasound, CT and MRI scan, Nuclear medicine scan etc.

Unit 3: Identification

Identification of dead-body, methods, identification of living- animal or human, age, sex determination.

Unit 4: Applications of Forensic Radiology

Smuggling/ border control, dental identification, gun-shot wound.

Course outcome: After studying this paper student will able to learn

CO1	Basic Principles of radiology
CO2	Forensic significance of radiology
CO3	Importance of radiology examination in species, age estimation and sex identification.
CO4	Personal identification through radiology.

Suggested Readings

1. Petroveeki, Vedrana, Leo Re G,Argo, Midriri M, Cattaneo C,eds. Radiology in Forensic Medicine: from Identification to Post-mortem Imaging.
2. Thali, M.J., Viner M.D., & Brogdon, B.G (Eds.) 2010. Brogdon's Forensic Radiology(2nd edition)
3. Richard W, Brant W, "Fundamentals of Body CT
4. Govinda D "Forensic Radiology made essay"

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Department of Forensic Science: Multi-Disciplinary Courses (MCDC) and Value Added Courses (VAC)
as per NEP 2020

- Skill Enhancement Course: Wildlife Forensic
- Course Code : SECFS03
- No. of Credits : 3 (Theory)
- Examination Pattern: As per university regulation
- Total Marks : 100
- No. of Teaching Hours : 45

SECFS03: Wildlife Forensic

Unit I: Introduction to Wildlife Forensics

Introduction and importance of wildlife, Protected and Endangered species of animals and plants, Sanctuaries and their importance, Wildlife crime case studies.

Unit 2: Wildlife Crimes and its Investigation

Introduction to Wildlife Crimes and its types, Investigation of a wildlife crime scene, Different methods of killing and poaching of wildlife animals, Techniques of Species identification.

Unit 3: Wildlife Crime Evidence

Illegal wildlife trade, Identification techniques for wildlife evidences encountered at crime scene, Identification of pug marks of different animals, various forensic protocols for species identification, Molecular markers used in wildlife forensics; Wildlife Protection Act, 1972.

Unit 4: Wildlife Conservation Agencies

Introduction to Wildlife conservation agencies-WWF, IUCN, CITES, WCCB, Wildlife conservation society, Defenders of Wildlife, Big lite Foundation, International fund for Animal welfare, National wildlife federation, Red Data Book.

Course Outcome (CO) : Wildlife Forensics

CO1	Students will learn the importance of criminology
CO2	Students will learn the causes of criminal behavior
CO3	Students will learn the significance of criminal profiling to mitigate crime.
CO4	Students will learn the consequences of crime in society and elements of criminal justice system

Suggested Readings

1. Huffman J.E. & Wallace J.R. (2012). Wildlife Forensics: Methods and Applications. USA, John Wiley & Sons
2. Hosetti, B.B; "Concept in Wildlife Management", Daya Publishing House, 2005.
3. Linarce, Adrian; "Forensic Science in Wildlife Investigation", CRC Press, Taylor & Francis, 2009
4. Baalu, T.R.; "The Wildlife Protection Act, 1972", Nataraj Publication, 2001.

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