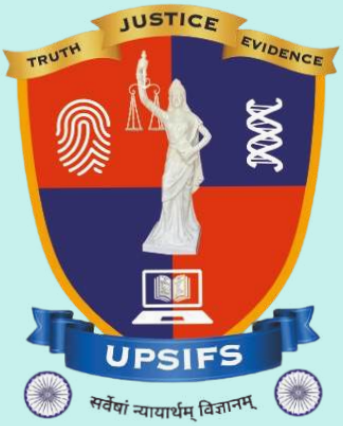

ADVANCED CERTIFICATE COURSE
ON
LAW WITH LABS:
CYBER FORENSICS IN PRACTICE

UTTAR PRADESH
STATE INSTITUTE OF FORENSIC SCIENCE
LUCKNOW

WWW.UPSIFS.AC.IN

ABOUT US

Uttar Pradesh State Institute of Forensic Science (UPSIFS), Lucknow established by the Government of Uttar Pradesh, a newly created institute spread over fifty acres of land, is a flagship project of the Government of Uttar Pradesh, and was inaugurated by the Hon'ble Prime Minister of India in March 2024. UPSIFS is affiliated to the National Forensic Science University, Gandhinagar. The institute has built-up world-class laboratory facilities. We have successfully completed the First Batch (2023-24) of 05 courses in July, 2024. The new academic session 2024-25 has commenced from 21st August, 2024 for graduation and post-graduation degrees in fields of Forensic Science, Computer Science and Cyber Security and Legal Studies. We have introduced a new concept- "LAW with LABS" for integrating legal studies with hands-on training of law students in the fields of DNA, Fingerprint, Document Forensic, Ballistics, Cyber Security etc. so that they may understand fine nuances of science and law. UPSIFS is devoted to create “Forensic-as-a-Service” (FaaS).

INTRODUCTION TO THE COURSE

Advanced Certificate Course in Cyber Law and Cyber Forensics is one of the most unique programs in India, offering a seamless blend of theoretical knowledge and practical skills essential for understanding and addressing the complexities of cyber law and digital forensics. As a three-credit course, it provides participants with a valuable edge for career advancement in legal, forensic, and cybersecurity domains. UPSIFS takes pride in pioneering this innovative program, which stands out for its multidisciplinary teaching approach, featuring industry experts, seasoned police personnel, and accomplished advocates. This holistic learning experience equips participants with both academic insights and practical expertise, making it a standout opportunity for those seeking to excel in this dynamic field.

The Course offered by Uttar Pradesh State Institute of Forensic Science (UPSIFS), Lucknow, is an intensive program designed to meet the urgent need for skilled professionals in the field of cyber law and digital forensics. As cyber threats and digital crimes escalate globally, understanding both legal frameworks and forensic methods is crucial for safeguarding digital spaces and enforcing justice. This three-month course integrates foundational knowledge of cyber law with hands-on forensic training, making it an ideal learning experience for law students, professionals, and individuals interested in cyber law and cyber investigation. The course's hybrid format combines 50 sessions, including lectures, case studies, and practical work, ensuring participants gain both theoretical knowledge and practical experience. Participants will learn about cybercrime legislation, evidence collection, digital contracts, and data protection laws, while also mastering forensic tools like FTK Imager and Autopsy. Guided by experts from academia and law enforcement, this course promises a holistic understanding of the intersections between technology and law, equipping participants to analyze, investigate, and navigate complex cyber law scenarios confidently. Successful completion grants participants a certificate and opens doors to careers in cyber law, cybersecurity consultancy, and regulatory compliance across various sectors.

WHY THIS COURSE

In the interconnected digital age, cyber technology permeates every aspect of life—academia, daily transactions, and governance. With the exponential rise in cybercrimes such as data breaches, financial fraud, and ransomware attacks—highlighted by global incidents like the WannaCry ransomware epidemic and high-profile corporate breaches—understanding cyber forensics has become a necessity for all. This course is crucial for equipping common people with the knowledge to safeguard personal data and recognize cyber threats, advocates with the skills to handle cases involving digital evidence, judges with the ability to adjudicate cyber-related cases effectively, and law students with specialized expertise to thrive in the evolving nexus of law and technology. It provides a comprehensive foundation to address the challenges of the digital era with confidence and competence.

This course bridges the gap between law and technology, offering legal nuances to technocrats and technical intricacies to lawyers, creating a harmonious blend of expertise for tackling challenges in the digital age.

"IMBUING TECHNOCRATS WITH LEGAL FINESSE AND LAWYERS WITH TECHNICAL PROWESS"

TARGET AUDIENCE

This course is designed to enable legal experts to understand technical nuances and technical experts to grasp legal intricacies, ensuring they can effectively contribute to the criminal justice system. It is beneficial for:

- **Advocates and Legal Professionals**: To expand their understanding of cyber and digital forensic aspects.
- **Cyber Experts and Forensic Analysts**: To gain insights into the legal frameworks relevant to their expertise.
- **Police Personnel**: To enhance their proficiency in handling cyber-related cases.
- **Judiciary Members**: To better comprehend the technical aspects of cases they adjudicate.
- **Students of Law, Cyber technology and Forensic Sciences**: To develop an interdisciplinary skillset for a competitive edge.
- **Awakened Individuals**: Anyone interested in understanding the nuances of cyber laws and digital know-how.

This course is a valuable resource for all those keen on bridging the gap between law and technology in the context of the criminal justice system.

COURSE OVERVIEW

- **Duration**: 3 Month (12 weeks)
  *[Classes to be scheduled on Fridays and Saturdays
  from 05:00 PM to 07:00 PM IST]
- **Course Format**: Lectures, Case Studies, Hands-on Practice
- **Level**: An Advanced Certificate Course (Advanced and in-depth understanding of the concepts)
- **Credit**: 3 Credit Course (NEP, 2020) (45+5= 50 hours of Teaching & Assessment)
- **Mode**: Hybrid (Online and Offline both)
- **Commencement**: From 24th January, 2025

COURSE OBJECTIVES

- To provide a foundational understanding of cyber law, digital forensics, and their intersections with traditional legal principles.
- To examine key legislation, case laws, and current challenges within the scope of cyber law.
- To familiarize participants with fundamental forensic methods, digital evidence management, and investigative techniques.
- To equip participants with the skills to identify and interpret digital evidence in a legal context.

LEARNING OUTCOMES

- Understand and apply cyber laws to real-world scenarios.
- Analyze cybercrimes from legal and forensic perspectives.
- Utilize basic cyber forensic tools and methods for investigation.
- Evaluate the challenges and emerging trends in cyber law and forensics.

TEACHING PEDAGOGY

- **Lectures**: Core legal principles and forensic methodologies.
- **Case Studies**: Legal analysis of the leading judgments of the Hon'ble Supreme Court and High Courts.
- **Tutorials**: Group discussions, problem-solving, and debates.
- **Practical Sessions**: Hands-on training in cyber forensic tools.

ASSESSMENT METHODS

- MCQ based test after every module

CURRICULUM OUTLINE

MODULE 1

INTRODUCTION TO CYBER LAW

Week 1-: Introduction to Cyber Law and Cyber Security

- Overview
  - Scope and Importance of Cyber Law
  - Evolution of Cyber Law: Indian and Global Perspective
  - The philosophy of cyber law: Techno-legal approach
- Roles in the Legal System
  - Basic cybersecurity principles (Confidentiality, Integrity, Availability)
  - Types of cyber threats (malware, phishing, ransomware, etc.)
  - Jurisdictional complexities of Cyberspace

Week 1: Fundamentals of Cyber Technology

- Computing Basics and Digital Communication
  - Hardware and Software Basics
  - Internet and Networking Concepts
  - Email Protocols, Instant Messaging, Social Media
- Emerging Technologies
  - Artificial Intelligence, Blockchain
  - Internet of Things (IoT), Big Data, Metaverse
- Incident Response and legal Protocols
  - Legal requirements for responding to cyber incidents
  - Incident reporting laws and protocols
  - Data Breach and Legal Considerations
- Activity: Research and present on a recent technological development with legal implications.

Week 2: Introduction to Cyber Crimes

- Classification of Cyber Crimes
  - Financial Cyber Crimes – Banking and Investment Frauds
  - Content Based Crime- Cyber Stalking, Cyber Bullying, Fake News, Audio/ /Video Tampering, Child Exploitation, Cyber Terrorism
  - Data Related Crime- Data Theft and Systematic Breaches
- Digital Arrest – Definition and Scope, Jurisdiction issues, Rights of Accused, Digital Forensics
- Technical Aspects of Cyber Crimes
  - Phishing Techniques, Malware Types
  - Network Intrusion Techniques
- Cybersecurity Threats
  - Common Vulnerabilities and Exploits
  - Risk Mitigation Strategies
- Activity: Discussion on recent cybercrime cases and evolving threats.

MODULE 2
CYBER CRIMES AND LEGAL FRAMEWORKS

Week 3: Cyber Crime Laws and Investigation Techniques

- Indian Cyber Law (IT Act, 2000; DPDP, 2023)
  - Key Provisions and Penalties, new and old laws
  - Key Amendments, new and old criminal laws
  - Other International Laws related to cyber crime
- Law Enforcement Techniques
  - Evidence Collection and Preservation
  - Interviewing Witnesses and Suspects
- Activity: Case study on leading cyber-crime cases in India.

Week 3: Cyber Forensics: Tools and Techniques

- Digital Evidence Basics
  - Types: Documents, Images, Audio, Logs
  - Hashing and Data Integrity
- Cyber Forensic Tools
  - Imaging Tools: FTK Imager, EnCase
  - Open-Source Tools: Autopsy, X-Ways, Volatility
- Evidence Handling
  - Chain of Custody, Documentation
- Activity: Practical session on handling and preserving digital evidence.

Week 4: Introduction to OSINT

- Overview of OSINT Tools and Frameworks
- OSINT Techniques and Data Gathering
- Practical Session on OSINT Tools (Hands-On)

Week 5: Cyber Judicial System and Institutional Framework

- Judicial Structure for Cyber Crimes
  - High Courts, Supreme Court, Cyber Appellate Tribunal
- Regulatory Bodies
  - CERT-In, NCIIPC, Data Protection Authorities
- Key International Instruments and International Cooperation
  - INTERPOL, UN, ASEAN
  - Budapest Convention
- Activity: Mock investigation and reporting on a hypothetical cyber incident.

MODULE 3

CYBER SPACE LEGALITIES AND DIGITAL CONTRACTS

Week 5: Law Relating to Digital Contracts and E-Commerce

- Digital Contracts
  - Elements of a Valid Digital Contract
  - Digital Signatures
- E-Commerce Legal Issues and Framework
  - Jurisdiction and Liability
  - Consumer Protection in E-Commerce
- Activity: Draft a sample e-contract and discuss legal enforceability.

Week 6: Techno-Legal Aspects of Digital Signatures and Electronic Authentication

- Digital Signatures Basics
  - Public Key Infrastructure (PKI)
  - Digital vs. Electronic Signatures
- Applications of E-Signatures
  - Banking, E-Governance, Healthcare
  - Digital Certificates and Certification Authority
  - International Standards
- Activity: Simulation on securing a digital transaction using e-signatures.

Week 6: Privacy and Data Protection Laws

- Data Breach Management
  - Incident Response, Notification Obligations
  - Privacy by Design and Breach Management
- Challenges of Data Protection in Cyberspace

MODULE 4

ADVANCED REGIME IN CYBER LAW AND COMPLIANCE

Week 7: Intellectual Property Rights in Cyberspace

- Copyright in Cyber Space –Digital Content Protection, Software Licensing, Fair Use, Digital Rights Management {DRM}
- Trademark In Cyber Space – Digital Branding, Cybersquatting, Metaverse and Virtual Trademarks
- Patents in Cyber Space- Software Patents, Business Method Patents, Open Source and Patents conflicts
- Activity: A case study on intellectual property disputes in cyberspace.

Week 8: Digital Financial Services and Regulatory Compliance

- Digital Payment Systems
  Online Banking, Mobile Wallets
- Compliance Requirements
  Cybersecurity for Financial Institutions – RBI Guidelines
  CERT-In Rules, 2013; Intermediaries and Digital Media Ethics Code Rules, 2021
- Elements Of Finance and Forensic Accounting
  Basics of financial accounting and financial analytics
  Basics of forensic accounting

Week 9: Computer Registry Analysis

- Basics of Computer Registry
- Tools and Techniques for Registry Analysis
- Practical Session on Registry Analysis (Hands-On)

Week 10: CDR AND IPDR Analysis

- Introduction to CDR and IPDR
- Tools and Techniques for Analysis
- Hands-on: Real-World Scenarios Using CDR/IPDR Analysis Tools

Week 11: Emerging Concerns and Future Directions in Cyber Law

- Legal Challenges in AI, Blockchain, Big Data, Metaverse
  Legal and Ethical Implications of AI
  Smart Contracts, Decentralization
  Legal Framework for Data Collection

- Ethical Considerations and Legal Reforms
  Future Directions in Cyber Security
  Digital Infrastructure and Social Impact

- Crimes Related to Drones and Robotics in India
  Overview of Drone technology

FINAL REVIEW & PRESENTATIONS

Week 12: Course Summary and Case Study Presentations

- Final Presentations

  Case studies presentations on cyber law and understanding of course concepts.
- Review and Feedback

  Reflect on key learning and discuss future directions in cyberlaw.

RECOMMENDED READINGS

1. Books:

- Cyber Law in India by Pavan Duggal
- Computer Forensics: Principles and Practices by Linda Volonino and Reynaldo Anzaldua
- Cybersecurity Law by Jeff Kosseff

2. Journals:

- Harvard Journal of Law & Technology
- International Journal of Digital Crime and Forensics

3. Online Resources:

- Websites of CERT-In, Interpol, and regional cybercrime agencies
- Open educational resources on cyber forensics tools

Note: Daily readings will be shared before the commencement of the classes.

ACADEMIC ADVISORS/EXPERTS

- Dr G K Goswami (IPS), Director, UPSIFS
- Shri Ravi Sharma, Chairman, IIIT UNA, IIT Nagpur and TEMA, India
- Sh. Pawan Sharma, Founder and CEO, Braviti Digital Inc, USA
- Prof. G.S. Bajpai, Hon'ble Vice-chancellor, NLU, Delhi
- Dr. A P Singh, VC, RMLNLU, Lucknow
- Prof. Preeti Saxena, VC, HPNLU, Shimla
- Prof Arun Mohan Sherry, Director, IIIT, Lucknow
- Prof. VK Ahuja, Director, ILI
- Prof. Arvind Kumar Tiwari, Dean, School of Law, Rights and Constitutional Governance, TISS, Mumbai
- Prof. P Puneeth, JNU, New Delhi
- Prof. Arunabha Mukhopadhyay, Information Technology and Systems, IIM Lucknow
- Prof. Mohd A. Arafa, Professor, Cornell Law School, USA
- Dr. A. Nagarathna, NLSIU, Bangalore
- Sh. Triveni Singh, Retd IPS, Cyber Expert
- Dr. Ranjeet Singh, CEO, SIFS, India
- Advocate Prashant Mali, Cyber Expert, Bombay High Court
- Shri Rakshit Tandon, Cyber Security Expert, India
- Shri Rohit Negi, Senior Vice President, C3i Hub, IIT Kanpur
- Shri Samir Kumar Datt, CEO, Foundation Futuristic Technologies Pvt. Ltd. New Delhi, India
- Shri Arvind Tripathy, Blockchain Expert & General Secretary, Youth for Nation
- Nisheeth Dixit, Cyber Law Expert, Delhi
- Mr. Upendra Giri, Founder, North India Chapter, PMI, USA.
- Dr. Anil Sain, LC-1, Delhi University
- Dr. Shekhar Shukla, Assistant Professor, IIM Indore
- Mr. Atul Yadav, Additional SP, Cyber Crime, Government of UP
- Shri Balaji Venkateshwar, Cyber Defense Researcher, New Delhi
- Mr. Milind Raj, Drone man of India
- Shri Harold D'Costa, President, Cyber Security Corporation, Pune

***Note:** Renowned international cyber experts, central government security agency officials, and officers from UP ATS and STF will also deliver lectures as a part of the course.

FEE STRUCTURE AND ELIGIBILITY

- **Course Fee**: ₹12,000/-
- **Mode of Payment**: UPI, NEFT, Online Banking
- **Basic Eligibility for the Course**: This certificate course is open to lawyers, students, cyber security enthusiasts, and professionals from law, IT, forensic science, or related fields. Designed for all skill levels, it covers both basic concepts and advanced applications in law and digital forensics.

COURSE ORGANISATION

- **Course Coordinator:** Dr. Roshan Singh
  Dean, School of Science and Technology
  UPSIFS, Lucknow
- **Course Co-Coordinator**: Dr. Abhishek Dixit,
  Asst. Professor, UPSIFS, Lucknow
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  Mob.No.: (+91) 83070 70906
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