Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Forensic Science
B.Sc. Digital & Cyber Forensics- Batch (2025-29)
SEMESTER-II

BDCF201 CYBER SECURITY AND RELATED LAWS

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*	L	T	P	CREDITS
BDCF201	Major	Cyber Security and Related Laws	60	20	20	60	40	4	0	4	6

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical: **C** - Credit; Th. - Theory
***Teacher Assessment** shall be based on the following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES
The student will have the ability to:
1. Basics of Cyber Security
2. To know the status of Cybercrimes.
3. Introduction to Cyber Laws.
4. Various types of Intellectual Property Rights.

COURSE OUTCOMES
Upon completion of the subject, students will be able to:
1. Basics of Cyber Security.
2. To understand cybersecurity risks in India.
3. Understand local and global-level cybercrimes.
4. Understand the Cyber Law of India.
5. Various types of cybercrimes and their effect.

COURSE CONTENT

Unit I: Introduction to Cyber Crime
Introduction to cybercrime and information security, classification of cybercrimes. Computer security concepts, Security services, OSI security, Security mechanism, Security attacks and their types, Fundamental security design principles, Model for security network security.

Unit II: Types of Cyber Attack
Modus operandi of cybercrime, proxy server and anonymizers, identity theft, password cracking, virus, and worms; types, manner of attack – trojan horse, backdoors, logic bombs etc., steganography, DoS and DDoS attacks, SQL injection, buffer overflow, attacks on wireless networks.

Unit III: IT Act

Information Technology (Amendment) Act 2008 – Objective, Applicability and Jurisdiction; Various cyber – crimes under Sections 43 (a) to (j), 43A, 65, 66, 66A to 66F, 67, 67A, 67B, 70, 70A, 70B, 80 etc. along with respective penalties, punishment and fines, Penal Provisions for Phishing, Spam, Virus, Worms, Malware, Hacking, Trespass and Stalking; Human rights in cyberspace, International Co-operation in investigating cybercrimes.

Unit IV: Intellectual Property Rights

Introduction to Intellectual Property Rights, Concepts and Theories. Kinds of Intellectual Property Rights. Need for Private Rights versus Public Interests Advantages and Disadvantages of Intellectual Property Rights.

Unit V: Cybercrime

Cybercrime status in India. Need of cyber law in India. Digital signature and the Information Technology Act. Overview of digital evidence related to cybercrimes. Admissibility of digital evidence in Indian courts.

List of Practical:

1. Case study related to cybercrime in India.
2. Review a case in which punishment was given for infringement of copyright.
3. Review cybersecurity protocols.
4. Search and collect evidence related to digital and cybercrime from a dummy crime scene.
5. Pack, seal and label evidence related to digital and cybercrime from a dummy crime scene.
6. Write a review on the process of submission of digital evidence in court.

Reference Book:

1. Nina Godbole and Sunit Belapore; "Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives", Wiley Publications, 2011.
2. Karnika Seth; "Computers, Internet and New Technology Laws", Lexis Nexis Buttersworth Wadhwa, 2012.
3. Bill Nelson, Amelia Phillips and Christopher
4. William Stallings; "Cryptography and Network Security: Principles and Practices", Fifth Edition, Prentice Hall Publication Inc., 2007.
5. Atul Jain; "Cyber Crime: Issues, Threats and Management", 2004.
6. Majid Yar; "Cybercrime and Society", Sage Publications, 2006.
7. Pavan Duggal; "Cyber Law – The Indian Perspective", Saakshar Law Publications

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SEMESTER-II

BDCF202 OPERATING SYSTEMS

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BDCF202	Minor	Operating Systems	60	20	20	60	40	4	0	4	6

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical: **C** - Credit; Th. - Theory
***Teacher Assessment** shall be based on the following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES
The student will have the ability to:
1. Understand the architecture of a computer system.
2. Basic concept of Operating System.
3. Concepts of processor management and memory management techniques.
4. Familiar with how the operating system works.

COURSE OUTCOMES
Upon completion of the subject, students will be able to:
1. Able to demonstrate operating system structure.
2. Understand the internal design of the operating system.
3. Understand scheduling and memory management techniques.
4. Management of a computer system.
5. Register and transfer of data and micro-operations.

COURSE CONTENT
Unit-I: Introduction to Operating Systems
Introduction to Operating Systems. Functions and the services provided by the operating system. Evolution of Operating systems: Batch processing, Multiprogramming, Multithreading, Time sharing systems, Real Time, Distributed systems, Operating system structure: System calls and system programs.

Unit-II: Process Management
Process concept and management, Process Control Block, Process states, Process scheduling, CPU scheduling, concept of scheduling and scheduling criteria. Scheduling algorithms, Measurement of the performance of a processor.

Unit-III: Introduction to Memory Management

Introduction to memory management, logical and physical address spaces. Swapping and paging, Contiguous allocation and its drawbacks, Non-contiguous allocation. Virtual memory: - Demand paging and its need, Performance of demand paging, Page replacement and its need, Thrashing and allocation of frames.

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Unit-IV: Synchronization of Process

Synchronization of the process. Mutual exclusion and synchronization, Concept of semaphores, Classical IPC problems. Deadlocks and its characteristics, Methods of handling, prevention, detection and avoidance, Recovery from deadlock.

Unit-V: I/O Devices and Disk Structure

Various I/O devices, Device drivers, structure of I/O software, Transforming I/O request of h/w operation. Disk structure, Various Scheduling algorithms. Disk management, Swap space management and Disk reliability.

List of Practical:

1. How to log in and get familiar with linux desktop.
2. Understanding Linux shell.
3. Different types of text editors.
4. How to use the vi editor.
5. How to correct typing errors.
6. Simple shell commands like date, cal, who, tty, uname, passwd. bc.
7. Use of commands pwd, cd, mkdir, rmdir, ls, pr.
8. How to use commands cat, cp, mv, wc, rm.
9. Working with file attributes.
10. Changing file permissions.
11. Changing ownership of fil

Suggested Reading:

1. Silberschatz Galvin, Operating System concept, 5th edition.
2. D. M. Dhamdhare, System Programming and operating system, Tata McGraw Hill, 2nd edition.
3. Milan Milenkovi"c, Operating System concept and design, Tata McGraw Hill.
4. Tanenbaum, A.S. "Modern Operating System", Prentice Hall of India Pvt. Ltd.
5. William Stallings "Operating Systems", Prentice Hall of India Pvt. Ltd.6. Joshi R.C. "Operating System"
   Wiley India.

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