

Teaching Plan (January 2026 - June 2026)



Department of Information Technology
LCB College, Maligaon, Guwahati

Course: Bachelor of Computer Application
(As per GU-FYUGP)
Programme: NEP-BCA
Semester: 6

Paper Title: Information Security and Cyber Laws
Course Level: 300-399
Course Type: Elective
Paper Code: TBA
Theory Credit: 4
Practical Credit: NIL

Instructor: Mr. Manjit Kumar Nath

Total Hours: 60 (Theory-60 + Practical-0)

UNIT 1 – Introduction (15 Lectures)

Lecture No.	Topics Covered	Mode of Teaching	Assessment
1–2	Basic components of security: Confidentiality, Integrity, Availability (CIA)	Classroom + ICT	Quiz / Discussion
3	Attacks, computer crime, security services and mechanisms	Lecture + Examples	Class test question
4–5	Cyber crimes: definition, categories, introduction to IT Act	Case study	Short assignment
6–7	Cryptography basics: substitution cipher, transposition cipher, confusion & diffusion	Lecture + Demo	Quiz
8–9	Symmetric key cryptography, DES algorithm	Lecture + Examples	Problem exercise
10	Hash functions and properties	Lecture + ICT	Short test
11	Digital signatures: concept and verification	Demonstration	Class exercise
12	Digital certificates and PKI	ICT Demo	Quiz
13	Block cipher and stream cipher	Lecture	Class test prep
14	Encryption/decryption examples and numerical problems	Tutorial	Practice problems
15	Unit review	Revision	Unit quiz

UNIT 2 – Program Security (10 Lectures)

Lecture No.	Topics Covered	Mode of Teaching	Assessment
16	Program security concepts and program errors	Lecture	Quiz
17–18	Buffer overflow: concept, examples, prevention	Demo + Code examples	Assignment
19	Incomplete mediation and TOCTOU errors	Case discussion	Short test
20	Malicious code: virus, worm, trojan	Video + Lecture	Quiz
21	Threats to programs and control mechanisms	Lecture	Assignment
22	Memory and address protection in OS	Lecture	Class test
23	Access control models and file protection	Lecture	Assignment question

Lecture No.	Topics Covered	Mode of Teaching	Assessment
24	User authentication techniques	Demonstration	Quiz
25	Unit review and discussion	Revision	Unit quiz

UNIT 3 – Database Security (10 Lectures)

Lecture No.	Topics Covered	Mode of Teaching	Assessment
26	Reliability and integrity in databases	Lecture	Quiz
27	Sensitive data and inference problems	Case discussion	Assignment
28	Data protection techniques	Demonstration	Quiz
29	Multiple security levels and user categorization	Lecture	Class test
30	Loss of integrity, availability and confidentiality	Case study	Test preparation
31	Database access control	Lecture + Demo	Exercise
32	Inference control and flow control	Lecture	Quiz
33	Data encryption in databases	Lecture	Assignment
34	Database auditing and security mechanisms	Demonstration	Quiz
35	Unit review	Revision	Sessional Exam Preparation

UNIT 4 – Security in Networks (Cyber Attacks) (15 Lectures)

Lecture No.	Topics Covered	Mode of Teaching	Assessment
36	Network threats and security architecture	Lecture	Quiz
37	Encryption and authentication in networks	Demonstration	Class test
38–39	Firewalls: design and types	Demo	Assignment
40	Intrusion detection systems	Packet capture demo	Quiz
41	Secure email, PGP, S/MIME	Demonstration	Exercise
42	Denial-of-service attacks	Case study	Quiz
43	Man-in-the-middle, phishing, spoofing, spam	Demo	Assignment
44	SQL injection, cross-site scripting, drive-by attacks	Code demonstration	Class test

Lecture No.	Topics Covered	Mode of Teaching	Assessment
45	Birthday attacks, password attacks, social engineering	Lecture	Quiz
46	Malware attacks and defenses	Case study	Assignment
47	Web servers, HTTP, cookies, caching	Demonstration	Exercise
48	SSL and SET	ICT Demo	Quiz
49	Email protocols: SMTP, POP, IMAP	Lecture	Short test
50	Security planning, risk analysis, organisational security policy	Workshop	Assignment

UNIT 5 – Cyber Laws (10 Lectures)

Lecture No.	Topics Covered	Mode of Teaching	Assessment
51	Cyber crime and types of cyber crimes	Lecture	Quiz
52	IT Act 2000: salient features	Lecture	Quiz
53	Authorities and powers under IT Act	Lecture	Class test
54	Sections 43 and 65	Case study	Assignment
55	Sections 66 and 66A	Lecture	Quiz
56	Sections 66B–66E	Case study	Test
57	Sections 66F, 67, 67A, 67B	Lecture	Quiz
58	Section 72 and privacy provisions	Lecture	Assignment
59	Amendments and landmark cyber law cases	Seminar	Presentation
60	Course revision and feedback	Revision	Mock test
