

LABORATORY PRACTICAL PLANNING

Academic Year: 2025-26 (EVEN)

Institute Name: K. K. Wagh Polytechnic, Nashik

Program and Code: Information Technology (IF)

Course Name: Information Security

Class: SYIF-PARAM

Semester: 4th

Scheme: K

MSBTE Code: 0078

Course Code & Abbr.: 314319 (INS)

Name of Faculty: Mrs. D. D. Pawar

● Teaching-Learning & Assessment Scheme:

Course Code	Course Title & Abbr	Course Category	Learning Scheme				Credits	Paper Duration (Hrs.)	Assessment Scheme										Total Marks				
			Actual Contact Hrs/Week			SLH	NLH		Theory			Based on LL & TSL Practical				Based on SL							
			CL	TL	LL				FA TH	SA TH	Total	FA-PR		SA-PR		SLA							
												Max	Max	Max	Min	Max	Min	Max	Min				
314319	Information Security (INS)	AEC	3	-	2	1	6	3	3	30	70	100	40	25	20	25@	10	25	10	175			

Abbreviations: CL- Class Room Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA -Summative assessment, IKS – Indian Knowledge System, SLA - Self Learning Assessment

Legends: @ Internal Assessment, # External Assessment, *# On Line Examination, @\\$ Internal Online Examination

● COURSE LEVEL LEARNING OUTCOMES (COS)

By learning course Information Security (INS) Second Year students will be able to achieve & demonstrate the following COs on completion of course based learning.

- CO1 - Identify types of attacks which causes threat to Information Security.
- CO2 - Apply multi-factor user authentication and access control mechanisms on file, folder, device and Applications.
- CO3 - Apply basic encryption / decryption techniques for a given text.
- CO4 - Apply various encryption algorithms used for information security.
- CO5 - Implement security techniques to prevent internet threats.

● COs, Practical Laboratory Learning Outcome (LLOs) and Mapping:

Pr. No	LLO	Practical Title / Tutorial Title	Planned Date	Performance Date	Remark	Related self learning (if any)
1	1.1 1.2	i. Install and configure Antivirus software on system (Licensed copy) ii. Use privacy and security settings on operating system	A-17/12/2025 B-16/12/2025 C-15/12/2025			
2	2.1	i. Set up single level authentication for computer system ii. Recover the password of computer system using any freeware password recovery tool (Example- John the ripper)	A-24/12/2025 B-23/12/2025 C-22/12/2025			
3	3.1	i. Grant security to file, folder or application using access permissions and verify it ii. Grant access permission while sharing file and folder	A-31/12/2025 B-30/12/2025 C-29/12/2025			

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4	4.1	Write a utility using C/Shell programming to create strong password authentication (Password should be more than 8 characters, and combination of digits, letters and special characters #, %, &, @)	A-07/01/2026 B-06/01/2026 C-05/01/2026			
5	5.1	i. Write a C program to implement caesar cipher technique to perform encryption and decryption of text ii. Apply Caesar cipher technique to perform encryption and decryption of text using any open-source tool (Example - Cryptool)	A-14/01/2026 B-13/01/2026 C-12/01/2026			
6	6.1	i. Implement Vernam cipher encryption technique to perform encryption of text using C programming language ii. Apply Vernam cipher technique to perform encryption and decryption of text using any open-source tool (Example - Cryptool)	A-21/01/2026 B-20/01/2026 C-19/01/2026			
7	7.1	Implement rail fence encryption technique to perform encryption of text using C programming language	A-28/01/2026 B-27/01/2026 C-02/02/2026			
8	8.1	Implement simple Columnar Transposition encryption technique to perform encryption of text using C programming language	A-04/02/2026 B-03/02/2026 C-09/02/2026			
9	9.1	Create and verify Hash Code for given message using any Open-source tool. (Example-Cryptool)	A-11/02/2026 B-10/02/2026 C-16/02/2026			
10	10.1	i. Write a C program to implement Diffie-Hellman key exchange algorithm to perform encryption of text ii. Use Diffie-Hellman key exchange algorithm to perform encryption and decryption of text using any open-source tool (Example - Cryptool)	A-18/02/2026 B-17/02/2026 C-23/02/2026			

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Course Name: Information Security

Class: SYIF-PARAM **Semester:** 3rd

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Course Index: 304 **Learning Hrs.** 30

11	11.1 11.2	Use Steganography to encode and decode the message using any open-source tool (Example-OpenStego)	A-25/02/2026 B-24/02/2026 C-02/03/2026			
12	12.1	Create and verify digital signature using any Open-source tool (Example-Cryptool)	A-04/03/2026 B-28/02/2026 C-09/03/2026			
13	13.1	Configure firewall settings on any operating system	A-11/03/2026 B-10/03/2026 C-16/03/2026			
14	14.1	Send a test mail securely using any open-source tool (Example-Pretty Good Privacy with GnuPG)	A-18/03/2026 B-17/03/2026 C-23/03/2026			
15	15.1	Set up security policies for any web browser and Email account (Example: setting filter, spam for email security. Low security apps settings, cookies, synchronization for web browser))	A-25/03/2026 B-24/03/2026 C-30/03/2026			
**		Trace the path of website using Tracert Utility	A-01/04/2026 B-01/04/2026 C-01/04/2026			

ASSESSMENT METHODOLOGIES/TOOLS

A. Formative assessment (Assessment for Learning)

Continuous assessment based on process and product related performance indicators

Each practical will be assessed considering

60% weightage to process

40% weightage to product

A continuous assessment based on term work

B. Summative Assessment (Assessment of Learning) (SA-TH)

End semester examination, Lab performance, Viva voce

Mrs. D. D. Pawar

(Name & Signature of Staff)

Ms. M. S. Karande

(Name & Signature of HOD)