

TEACHING PLAN (TP)

Institute Name: 0078-K. K. Wagh Polytechnic, Nashik
Academic Year: 2025-26 (EVEN)
Course: Digital Forensic and Hacking Techniques (DFH)
Scheme: K
CLASS: TYIF (CRAY)

Programme: Information Technology (IF)
Course Code: 316315
Semester: Sixth
Name of Faculty: Ms.S.S.Shinde

COURSE LEVEL LEARNING OUTCOMES (COS)

- CO1 - Explain digital forensics investigation process.
- CO2 - Apply various Digital Forensic Investigation Models.
- CO3 - Apply digital Evidence collecting and handling techniques.
- CO4 - Identify various types of cyber-attacks.
- CO5 - Apply Tools and Techniques for Ethical Hacking.

TEACHING-LEARNING & ASSESSMENT SCHEME

Course Code	Course Title	Abbr	Course Category	Learning Scheme					Credits	Paper Duration	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	Min	Max	Min	Max	Min	Max	Min	
316315	Digital Forensic and Hacking Techniques.	DFH	DSE	3	-	2	1	6	3	3	30	70	100	40	25	10	25#	10	25	10	175

Total IKS Hrs for Sem.: 0 Hrs

Abbreviations: CL- Classroom 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

SUGGESTED COS - POS MATRIX FORM

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO- 1	PSO- 2
CO1	2	2	1	-	1	-	-	2	1
CO2	2	2	2	-	2	1	1	2	2
CO3	2	3	3	2	2	1	2	2	3
CO4	2	3	2	2	2	2	2	3	2
CO5	1	2	2	3	2	2	2	3	3

Legends :- High:03, Medium:02,Low:01, No Mapping: -*PSOs are formulated at institute level

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Unit No. (Allocated Hrs.)	CO	TLO aligned to CO's	Title/Details	Plan (No. of Lectures)		Actual Execution		Pedagogy Used	Remarks	
				From	To	From	To			
01 (08)	CO1		Unit - I Digital Forensics					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, Learn Live		
				3 Lectures						
		TLO 1.1	1.1 Overview of Digital forensics, Rules of digital forensic, Digital forensics investigation and its goal 1.2 Introduction to Cyber Crime and attack	16/12/25	19/12/25					
		TLO 1.2	1.3 Types of Digital Forensics	2 Lectures						
				23/12/25	24/12/25					
		TLO 1.3	1.4 Digital Forensics process 1.5 Areas of Applications of computer forensics	3 Lectures						
				26/12/25	30/12/26					
02 (08)	CO2		Unit - II Digital Forensic Investigation Models					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, Learn Live		
				3 Lectures						
		TLO 2.1	2.1 Models of Digital Forensic Investigation	31/12/26	06/01/26					
			2.2 Challenges in Digital Forensics	3 Lectures						
				07/01/26	09/01/26	13/1/26				
		TLO 2.2	2.3 Legal and Ethical Considerations in Digital Forensics	2 Lectures						
				14/01/26	16/01/26					

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				From	To	From	To		
03 (09)	CO3		Unit - III Digital Evidence					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, Learn Live	
				2 Lectures					
		TLO 3.1	3.1 Crime Scenes and Collecting Evidence-Removable Media. Cell Phones, Order of Volatility	20/01/26	21/02/26				
		TLO 3.2 TLO 3.3	3.2 Documenting the Scene, 3.3 Chain of Custody 3.4 Cloning	3 Lectures					
				23/02/26	30/02/26				
		TLO 3.4	3.5 Live System versus Dead System	2 Lectures					
				03/02/26	04/02/26				
		TLO 3.5	3.6 Hashing	2 Lectures					
				06/02/26	10/02/26				
04 (10)	CO4		Unit - IV Basics of Hacking					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, Learn Live	
				3 Lectures					
		TLO 4.1	4.1 Ethical Hacking 4.2 Understanding the need to hack your own systems	11/02/26	17/02/26				
		TLO 4.2	4.3 Understanding the dangers your systems face	3 Lectures					
				18/02/26	24/02/26				
		TLO 4.3	4.4 Obeying the Ethical hacking Principles	2 Lectures					
				25/02/26	27/02/26				
				4.5 Ethical hacking Process	2 Lectures				
		03/03/26	04/03/26						

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				From	To	From	To		
05 (10)	CO5		Unit - V Hacking Techniques					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, Learn Live	
				2 Lectures					
		TLO 5.1	5.1 Overview of Ethical Hacking and Penetration Testing	06/03/26	10/03/26				
		TLO 5.2	5.2 Phases of Ethical Hacking: Reconnaissance, Scanning, Exploitation, Post-Exploitation	2 Lectures					
				11/03/26	13/03/26				
		TLO 5.3	5.3 Network Hacking	3 Lectures					
				17/03/26	20/03/26				
		TLO 5.4	5.4 Introduction to Social Engineering	3 Lectures					
				24/03/26	27/03/26				
		Content Beyond Syllabus			AI in Cyber Forensics	Second Week of January			

ASSESSMENT METHODOLOGIES/TOOLS

A. Formative assessment (Assessment for Learning) (FA-TH)

Continuous assessment based on process and product related performance indicators.

Each practical will be assessed considering 60% weightage is to process & 40% weightage to product.

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

End semester Examination, Lab performance, Viva-Voce.

C. Suggested micro project / assignment/ activities for specific learning / skills development (self-learning)

1. Arrange Visit to cyber cell or Digital Forensic Laboratory. OR Organize Expert Lecture of Cyber Expert.

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2. Complete any one course related to Digital Forensic and Hacking Techniques on MOOCs such as Infosys Springboard/udemy/any other online platform to enhance their learning.

SUGGESTED LEARNING MATERIALS / BOOKS

Sr. No	Author	Title	Publisher with ISBN Number
1	Pachghare V. K.	Cryptography and Information Security	PHI Learning Pvt. Ltd, Delhi ISBN-978-93-89347-11-1 ISBN- 978-93-89347-10-4
2	John Sammons	The Basics of Digital Forensic	Elsevier, Netherlands ISBN 978-1-59749-661-2
3	Kevin Beaver CISSP	Hacking for Dummies	Wiley Publishing, New Delhi ISBN: 978-81-265-6554-2
4	Mark D. Spivey CISSP	Practical Hacking Techniques and Countermeasures	Auerbach Publication, Taylor and Francis Group ISBN-13: 978-0-8493-7057-1

LEARNING WEBSITES & PORTALS

Sr.No	Link / Portal	Description
1	https://resources.infosecinstitute.com/digital-forensics-models/#gref	Introduction to Digital forensics models
2	https://docs.kali.org/introduction/download-official-kali-linux-images	Download Kali Linux and its installation steps
3	www.openwall.com/passwords/windows-pwdump	Hash Suite-auditing tool for Windows password hashes.
4	https://www.techtarget.com/searchsecurity/tutorial/How-to-use-Social-Engineer-Toolkit	How to use Social-Engineer Toolkit
5	https://www.youtube.com/watch?v=GZMUYqjAS6k	How to make a Forensic Image with FTK Imager
6	https://www.youtube.com/watch?v=qTaOZrDnMzQ	Wireshark Tutorial for Beginners

Ms. S. S. Shinde
 (Name & Signature of Faculty)

Ms. M. S. Karande
 (Name & Signature of HOD)

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