

**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			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				Max	Min	Max	Min	Max	Min	Max	Min	Max	Min		
316315	Digital Forensic and Hacking Techniques.	DFH	DSE	3	-	2	1	6	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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<b>Unit No. (Allocated Hrs.)</b>	<b>CO</b>	<b>TLO aligned to CO's</b>	<b>Title/Details</b>	<b>Plan (No. of Lectures)</b>		<b>Actual Execution</b>		<b>Pedagogy Used</b>	<b>Remark</b>		
				<b>From</b>	<b>To</b>	<b>From</b>	<b>To</b>				
01 (08)	CO1		<b>Unit - I Digital Forensics</b>					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							
02 (08)	CO2		<b>Unit - II Digital Forensic Investigation Models</b>					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							
		TLO 2.2		07/01/26	09/01/26	13/1/26					
		2.3 Legal and Ethical Considerations in Digital Forensics Considerations in Digital Forensics	2 Lectures								
				14/01/26	16/01/26						

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				<b>From</b>	<b>To</b>	<b>From</b>	<b>To</b>				
03 (09)	CO3		<b>Unit - III Digital Evidence</b>					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						
			TLO 3.4	3.5 Live System versus Dead System	23/02/26	30/02/26					
			TLO 3.5	3.6 Hashing	2 Lectures						
04 (10)	CO4		<b>Unit - IV Basics of Hacking</b>					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						
			TLO 4.3	4.4 Obeying the Ethical hacking Principles	18/02/26	24/02/26					
				4.5 Ethical hacking Process	25/02/26	27/02/26					

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				<b>From</b>	<b>To</b>	<b>From</b>	<b>To</b>				
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	11/03/26	13/03/26						
		TLO 5.3	5.3 Network Hacking	2 Lectures							
				17/03/26	20/03/26						
		TLO 5.4	5.4 Introduction to Social Engineering	3 Lectures							
				24/03/26	27/03/26						
<b>Content Beyond Syllabus</b>		<b>AI in Cyber Forensics</b>		<b>Second Week of January</b>							

**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**

<b>Sr. No</b>	<b>Author</b>	<b>Title</b>	<b>Publisher with ISBN Number</b>
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**

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

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

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

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