Maharashtra State Board of Technical Education, Mumbai

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 (PARAM)

Programme: Information Technology (IF)
Course Code: 316315
Semester: Sixth
Name of Faculty: Mrs. M. P. Nawarkar

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	Max	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. (Allocted Hrs.)	CO	TLO aligned to CO's	Title/Details	Plan (No. of Lectures)		Actual Execution		Pedagogy Used	Rem ark
				From	To	From	To		
01 (08)	CO1		**Unit - I Digital Forensics**					Black Board, Chalk, PPT+ LCD Videos, Google Classroo m, MKCL ERA	
				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	18/12/25				
		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					
				30/12/25	01/01/26				
02 (08)	CO2		**Unit - II Digital Forensic Investigation Models**					Black Board, Chalk, PPT+ LCD Videos, Google Classroo m, MKCL ERA	
		TLO 2.1	2.1 Models of Digital Forensic Investigation	3 Lectures					
				06/01/26	08/01/26				
			2.2 Challenges in Digital Forensics	3 Lectures					
				13/01/26	15/01/26				
		TLO 2.2	2.3 Legal and Ethical Considerations in Digital Forensics Considerations in Digital Forensics	2 Lectures					
				20/01/26	21/01/26				

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Unit No. (Alloc ted Hrs.)	CO	TLO aligned to CO's	Title/Details	Plan (No. of Lectures)		Actual Execution		Pedagogy Used	Rem ark
				From	**To**	**From**	**To**		
03 (09)	CO3		**Unit - III Digital Evidence**					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, MKCL ERA	
				2 Lectures					
		TLO 3.1	3.1 Crime Scenes and Collecting Evidence- Removable Media. Cell Phones, Order of Volatility	22/01/26	03/02/26				
		TLO 3.2 TLO 3.3	3.2 Documenting the Scene, 3.3 Chain of Custody 3.4 Cloning	3 Lectures					
				04/02/26	07/02/26				
		TLO 3.4	3.5 Live System versus Dead System	2 Lectures					
				07/02/26	10/02/26				
		TLO 3.5	3.6 Hashing	2 Lectures					
				11/02/26	12/02/26				
04 (10)	CO4		**Unit - IV Basics of Hacking**					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, MKCL ERA	
				3 Lectures					
		TLO 4.1	4.1 Ethical Hacking 4.2 Understanding the need to hack your own systems	14/02/26	17/02/26				
		TLO 4.2	4.3 Understanding the dangers your systems face	3 Lectures					
				18/02/26	25/02/26				
		TLO 4.3	4.4 Obeying the Ethical hacking Principles	2 Lectures					
				26/02/26	28/02/26				
			4.5 Ethical hacking Process	2 Lectures					
				03/03/26	04/03/26				

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Unit No. (Allocated Hrs.)	CO	TLO aligned to CO's	Title/Details	Plan (No. of Lectures)		Actual Execution		Pedagogy Used	Remark
				From	To	From	To		
05 (10)	CO5		**Unit - V Hacking Techniques**					Black Board, Chalk, PPT+ LCD Videos, Google Classroom, MKCL ERA	
				2 Lectures					
		TLO 5.1	5.1 Overview of Ethical Hacking and Penetration Testing	05/03/26	07/03/26				
		TLO 5.2	5.2 Phases of Ethical Hacking: Reconnaissance, Scanning, Exploitation, Post-Exploitation	2 Lectures					
				10/03/26	11/03/26				
		TLO 5.3	5.3 Network Hacking	3 Lectures					
				12/03/26	17/03/26				
		TLO 5.4	5.4 Introduction to Social Engineering	3 Lectures					
				18/03/26	25/03/26				
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.
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.

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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-mod els/#gref.	Introduction to Digital forensics models
2	https://docs.kali.org/introduction/download-official-kali-li nux-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-us e-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

Mrs. M. P. Nawarkar

(Name & Signature of Faculty)

Ms. M. S. Karande

(Name & Signature of HOD)