ELECTIVE: II

BEIT705T4 DIGITAL FORENSIC FOR INFORMATION TECHNOLOGY

(Theory Credit: 05)

Teaching Scheme:	**Examination Scheme:**
Lecture: 4 Hours/week	**Theory: T (U): 80 Marks T (I): 20 Marks**
Tutorial: 1 Hour/week	**Duration of University Exam. : 03 Hours**

UNIT I:

Digital Forensics Fundamentals: What is Digital forensics?, Use of Digital forensics in law enforcement, computer forensics assistance, to human resources/employment proceedings, benefits of professional forensics methodology, steps taken by Digital forensics specialists Cyber Crimes: Definition, motives, and classification of cyber crimes. Modus operandi of cyber crime, types of cyber crimes,

UNIT II:

Computer Forensics Evidence Capture: Data recovery defined, data backup and recovery, the role of backup in data recovery, the data recovery solution Evidence Collection and Data Seizure: evidence, collection options, obstacles, types of evidence, the rules of evidence, volatile evidence, general procedure, collection and archiving, methods of collection, artifacts, collection steps controlling contamination: the chain of custody, Network Forensics: Network forensics overview, performing live acquisitions, developing standard procedures for network forensics, using network tools

UNIT III:

Duplication and Preservation of Digital Evidence: Preserving the digital crime scene computer evidence processing steps, legal aspects of collecting and preserving computer forensic evidence, Computer Forensics Analysis and Validation: Determining what data to collect and analyze, validating forensic data, addressing data, hiding techniques, and performing remote acquisitions

UNIT IV:

Processing Crime and Incident Scenes: Identifying digital evidence, collecting evidence in private sector incident scenes, processing law enforcement crime scenes, preparing for a search securing a computer incident or crime scene, seizing digital evidence at the scene, storing digital evidence, obtaining a digital hash, reviewing a case

UNIT V:

E-mail Investigations: Exploring the role of e-mail in investigations, exploring the roles of the client and server in e-mail, investigating e-mail crimes and violations, understanding e-mail servers, using specialized e-mail forensic tools,

Cell phone and mobile device forensics: Understanding mobile device forensics, understanding Acquisition procedures for cell phones and mobile devices, files present in SIM card, device data, external memory dump, evidences in memory card, operators systems,

Android forensics: Procedures for handling an android device, imaging android USB mass storage devices, logical and physical techniques

UNIT VI:

Working with Windows and DOS Systems: Understanding file systems, exploring Microsoft file structures, examining NTFS disks, understanding whole disc encryption, windows registry, Microsoft startup tasks, MSDOS startup tasks, virtual machines, Current Forensic Tools: Evaluating computer forensic tool needs, computer forensic software Tools, computer forensic hardware tools, validating and testing forensic software

Text Books:

1. The Basics of Digital Forensics: The Primer for Getting Started in Digital Forensics by John Sammons, Edition 1, Published by Elsevier February 24, 2012, ISBN: 978-1-59749-661-2

Reference Books:

1. Warren G. Kruse II and Jay G. Heiser, "Computer Forensics: Incident Response Essentials", Addison Wesley, 2002.
2. Nelson B, Phillips A, Enfinger F, Stuart C., "Guide to Computer Forensics and Investigations, 2nd ed., Thomson Course Technology, 2006, ISBN: 0-619-21706-5.

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