

CSCS 505 : Mobile Phone Security and Forensics

UNIT I

Mobile Phone Security : Confidentiality, Integrity, and Availability Threats in Mobile Phones, A Multinational Survey on Users' Practices, Perceptions, and Awareness Regarding Mobile Phone Security, Voice, SMS, and Identification Data Interception in GSM, Software and Hardware Mobile Phone Tricks, SMS Security Issues, Mobile Phone Forensics.

(12 hours)

UNIT II

Introduction to Mobile Forensics : The need for mobile forensics, Understanding mobile forensics, Challenges in mobile forensics, The mobile phone evidence extraction process, Practical mobile forensic approaches, Potential evidence stored on mobile phones, Examination and analysis, Rules of evidence, Good forensic practices, **Android Forensics :** Understanding Android, The evolution of Android, The Android architecture, Android security, The Android file hierarchy, The Android filesystem, Android Forensic Setup and Pre-Data Extraction Techniques, Setting up a forensic environment for Android, Connecting an Android device to a workstation, Screen lock bypassing techniques, Gaining root access

(12 hours)

UNIT III

Android Data Extraction Techniques : Understanding data extraction techniques, Manual data extraction, Logical data extraction, Physical data extraction, Android Data Analysis and Recovery, Analyzing and extracting data from Android image files using the Autopsy tool, Understanding techniques to recover deleted files from the SD card and the internal memory, Android App Analysis, Malware, and Reverse Engineering, Analyzing widely used Android apps to retrieve valuable data, Techniques to reverse engineer an Android application, Android malware.

(12 hours)

Text Books:

- (1). "Mobile Phone Security and Forensics - A Practical Approach", Iosif I. Androulidakis, Springer International Publishing Switzerland, 2016
- (2). "Practical Mobile Forensics - Forensically investigate and analyze iOS, Android, and Windows 10 devices", Rohit Tamma. et al, Packt Publishing, Fourth Edition, 2020
- (3). "Why Should I Care? to Protect Yourself and Your Organization from Today's Mobile Computing Threats, 10 Simple Things You Can Do, Mobile Security For The Rest Of Us", Veracode,
- (4). "iPhone and iOS Forensics - Investigation, Analysis and Mobile Security for Apple iPhone, iPad, and iOS Devices", Andrew Hoog, Katie Strzempka, Elsevier, 2011