# Swarnandhra College of Engineering & Technology

**Autonomous and recognized under 2(F) and 12(B) by UGC**

Recognized by AICTE, permanently affiliated to JNTUK Kakinada

Accredited by NAAC with 'A' Grade (2nd Cycle)

**Seetharamapurm, Narsapur – 530280 (Andhra Pradesh)**

## DEPARTMENT OF INFORMATION TECHNOLOGY

## TEACHING PLAN

| Course Code | Course Title | Semester | Branch | Contact Periods /Week | Academic Year | Date commenc |
|---|---|---|---|---|---|---|
| 20CC6T02 | Cyber Crime Investigation & Digital Forensics | VI | CSE-CS | 5 | 2024-25 | 18-11- |

### COURSE OUTCOMES

| | |
|---|---|
| 1 | Acquire the definition of computer forensics fundamentals. (K2) |
| 2 | Describe the types of computer forensics technology. (K3) |
| 3 | Analyze various computer forensics systems. (K4) |
| 4 | Illustrate the methods for data recovery, evidence collection and data seizure. (K3) |
| 5 | Summarize duplication and preservation of digital evidence. (K2) |

| UNIT | Out Comes / Bloom's Level | Topics No. | Topics/ Activity | Text Book/ Ref | Contact Hour | Deliv Meth |
|---|---|---|---|---|---|---|
| | | | **Unit-1: Introduction of Cyber Crime** | | | |
| | | 1.1 | Introduction of Cyber Crime | T1 | 1 | Cha & Boa |
| | | 1.2 | Overview of Cyber Crime | T1 | 1 | |
| | | 1.3 | Nature of Cyber Crime | T1 | 1 | |
| I | CO – 1 | 1.4 | Scope of Cyber Crime | T1 | 2 | |
| | | 1.5 | Types of Cyber Crime | T1 | 1 | Power present |
| | | 1.6 | Social Engineering | T1 | 2 | |
| | | 1.7 | Categories of Cyber Crime | T1 | 2 | Assign Te |
| | | 1.8 | Property Cyber Crime | T1 | 1 | |
| Content beyond syllabus | | 1.9 | Cyber Crime Portal - https://cybercrime.gov.in/ National Cyber Crime Reporting Portal | R1 | 1 | Video L |
| | | | **Total** | | 12 | |
| | | | **Unit-2: Cyber Crime Issues** | | | |
| | | 2.1 | Unauthorized Access to Computers | T1,T2 | 1 | Cha & Boa |
| II | CO – 2 | 2.2 | Computer Intrusions | T1,T2 | 1 | |
| | | 2.3 | White collar Crimes | T1 | 1 | |
| | | 2.4 | Viruses and Malicious Code | T1,T2 | 1 | |
| | | 2.5 | Internet Hacking and Cracking | T1,T2 | 1 | |
| | | 2.6 | Virus Attacks and Pornography | T1 | 1 | Power |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 2.7 | Software Piracy, Intellectual Property, Mail Bombs | T1 | 1 | presentation Assignment Test |
| | | 2.8 | Exploitation, Stalking and Obscenity in Internet | T1,T2 | 1 | |
| | | 2.9 | Digital laws and legislation | T2 | 1 | |
| | | 2.10 | Law Enforcement Roles and Responses. | T1 | 1 | |
| Content beyond syllabus | | 2.11 | Hacking, Malware and Identity Theft on Cybercrime. | R2 | 1 | NPTEL Vid |
| | | | Total | | 11 | |
| III | CO – 3 | | **Unit-3:   Investigation** | | | |
| | | 3.1 | Introduction to Cyber Crime Investigation | T1,T2 | 1 | Chalk & Board |
| | | 3.2 | Investigation Tools | T1,T2 | 1 | |
| | | 3.3 | e- Discovery, Digital Evidence Collection, Evidence Preservation. | T1,T2 | 2 | |
| | | 3.4 | E-Mail Investigation, E-Mail Tracking, IP Tracking, E-Mail Recovery. | T1,T2 | 1 | Power poin presentation |
| | | 3.5 | Hands on Case Studies | | 2 | |
| | | 3.6 | Encryption and Decryption Methods | | 1 | Assignment |
| | | 3.7 | Search and Seizure of Computers | | 1 | Test |
| | | 3.8 | Recovering Deleted Evidences and Password Cracking | | 1 | |
| Content beyond syllabus | | 3.9 | Cybercrime Investigation Tools and Techniques | R1 | 2 | Experimen Learning |
| | | | Total | | 12 | |
| IV | CO – 4 | | **Unit-4:   Digital Forensics** | | | |
| | | 4.1 | Introduction to Digital Forensics | T1,T2 | 1 | |
| | | 4.2 | Forensic Software and Hardware | T1,T2 | 1 | Chalk & Board |
| | | 4.3 | Analysis and Advanced Tools | T1,T2 | 1 | |
| | | 4.4 | Forensic Technology and Practices | T1,T2 | 1 | |
| | | 4.5 | Forensic Ballistics and Photography | T1,T2 | 2 | Power poin presentation |
| | | 4.6 | Face, Iris and Fingerprint Recognition | T1,T2 | 1 | |
| | | 4.7 | Audio Video Analysis | T1,T2 | 2 | |
| | | 4.8 | Windows System Forensics | T1,T2 | 2 | Assignment Test |
| | | 4.9 | Linux System Forensics and  Network Forensics | T1,T2 | 1 | |
| Content beyond syllabus | | 4.10 | Digital Forensics in Information Security | T2 | 1 | NPTEL Vid |
| | | | Total | | 13 | |
| V | CO – 5 | | **Unit-5:  Role of CRET-In Cyber Security** | | | |

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|---|---|---|---|---|---|---|---|
| | | 5.1 | Computer Security Incident Response (Reactive) | T2,R3 | 2 | | Chalk & Board Power point presentation Assignment Test |
| | | 5.2 | Computer Security Incident Prevention (Proactive) | T2,R3 | 2 | | |
| | | 5.3 | Security Quality Management Services | T2,R3 | 2 | | |
| | | 5.4 | CERT-In Security Guidelines- Web server, database server. | T2,R3 | 2 | | |
| | | 5.5 | Intrusion Detection system | T1,T2 | 1 | | |
| | | 5.6 | Networked System | T1,T2 | 1 | | |
| | | 5.7 | IT Security polices for government and critical sector organizations. | T1,T2 | 1 | | |
| Content beyond syllabus | | 5.8 | Computer Emergency Response Team( CERT) https://www.cert-in.org.in | T2, R1 | 1 | | Experiment Learning |
| | | | | Total | 12 | | |
| | | | Cumulative Proposed Periods | | 60 | | |

**Text Books:**

| S.No. | AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION |
|---|---|
| 1 | Thomas J. Holt, Adam M Bossler and Kathryn C. Seigfried.Spellat, "Cybercrime and Digi Forensics:" 2nd Edition, PaperBack, 19th October 2017. |
| 2 | Nihad A. Hassan, —Digital Forensics Basics: A Practical Guide Using Windows ( Paperback‖, February 26, 2019 |

**Reference Books:**

| S.No. | AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION |
|---|---|
| 1 | Nelson Phillips and EnfingerSteuart, —Computer Forensics and Investigations‖, Cengage Learning, New Delhi, 2009. |
| 2 | Kevin Mandia, Chris Prosise, Matt Pepe, —Incident Response and Computer Forensics—, Tat McGraw-Hill, New Delhi, 2006 |
| 3 | . Robert M Slade,‖ Software Forensics‖, Tata McGraw - Hill, New Delhi, 2005 |

**Web Details:**

| | |
|---|---|
| 1 | https://cybercrime.gov.in/ |
| 2 | https://www.cert-in.org.in |
| 3 | https://jhpolice.gov.in/sites/default/files/documents-reports/jhpolice_cyber_crime_investigation_manual.pdf |

| | | Name | Signature with Date |
|---|---|---|---|
| i | Faculty | Mrs. R. Uma Aruna Devi | R. QAR |
| ii | Module Coordinator | Dr. RVVSV Prasad | RvSupros d |
| iii | Programme Coordinator | Dr. RVVSV Prasad | RvSupros d |

Principal