CSC 548 – COMPUTER FORENSICS

CREDIT HOURS: 3
PREREQUISITES: CSC 241 or 331, 455 or 447; or Instructor Permission. CSC 562 recommended.
GRADE REMINDER: Must have a grade of C or better in each prerequisite course

CATALOG DESCRIPTION

Study of computer and cyber forensics. Learn and demonstrate understanding of different aspects of computer and cyber-crime and ways in which to uncover, protect, exploit, and document digital evidence. Students will be exposed to different types of tools (both software and hardware), techniques and procedures, and be able to use them to study and practice forensic investigations.

PURPOSE OF COURSE

To acquire the hands-on skills necessary for computer forensics through the use of case studies, hands-on exercises, and a final project. To study the perspectives of computer and related legal processes for evidence discovery, collection, and protection. To discuss relevant computer crimes from state and federal law, methods of interaction with law enforcement and prosecutors, admissibility of expert witness testimony and the use of forensic reports in civil, regulatory and internal investigations.

EDUCATIONAL OBJECTIVES

Upon successful completion of the course, students should be able to:

1. Identify the needs for forensic analysis in key critical infrastructure in various segments of our society.
2. Understand the complexity of the networks that make security and forensics a necessity.
3. Distinguish the need for cyber forensics in the use of discovering, protecting, and documenting digital evidence.
4. Demonstrate how to select and utilize appropriate software forensics tools used in forensic analysis.
5. Demonstrate the selection and use of hardware forensics equipment to protect and analyze forensic evidence.

CONTENT

Understanding Digital Forensics ...........................................3
The profession and need for forensics
History of forensics

Tools ........................................................................................................9
Current software
Required hardware
Performing Investigations .................................................................................................................................................. 9
  Data Acquisition
  Crime screen processing
  Processing Windows systems
  Processing LINUX and Macintosh file systems
  Virtual machine forensics

Detailed Forensics Applications ........................................................................................................................................ 9
  Email and Social Media
  Mobile devices
  Cloud forensics

Results .................................................................................................................................................................................................. 9
  Report writing
  Expert testimony
  Ethics for the expert witness

Exams (plus final) .................................................................................................................................................................. 6

TOTAL 45

REFERENCES

