SYLLABUS
PART I
EDISON STATE COMMUNITY COLLEGE
CYB 238S COMPUTER FORENSICS
3 CREDIT HOURS

COURSE DESCRIPTION
Focuses on the fundamental techniques and procedures used in computer forensics to identify, preserve, recover, and analyze digital evidence in criminal investigations. Students will learn how to utilize various forensic tools and methodologies to handle different types of data, including file system structures, logs, and encrypted files. The course will cover legal and ethical considerations, emphasizing the importance of maintaining a proper chain of custody and adhering to industry best practices. By the end of the course, students will be equipped with the skills necessary to conduct forensic analysis on both Windows and Linux systems and be prepared for the practical challenges of a forensic investigator. Prerequisite: CIS 214S and CIS 215S. Lab fee.

COURSE GOALS
The student will:

Bloom's Level			Program Outcomes
3	1.	Apply techniques to preserve and recover digital evidence from various file systems.	7, 8
4	2.	Analyze digital evidence using forensic tools to identify suspicious activities or breaches.	3, 8
5	3.	Evaluate forensic software to determine the most appropriate tool for specific investigations.	5, 8
5	4.	Create detailed reports and document the forensic analysis findings for legal and organizational use.	1, 2, 8
2	5.	Explain the legal and ethical implications of digital forensics, including chain of custody and privacy concerns.	1, 2
3	6.	Utilize file system analysis techniques for Windows and Linux environments.	4, 7, 8
4	7.	Analyze network traffic patterns and logs to identify potential security incidents and breaches.	3, 6, 8
5	8.	Evaluate different forensic tools and methods to select the most effective ones for various investigation scenarios.	5, 8
3	9.	Demonstrate proper use of encryption and decryption tools to secure sensitive forensic data and maintain integrity during analysis.	4, 7, 8
5	10.	Develop incident response strategies that integrate forensic analysis into the organizational cybersecurity framework.	3, 7, 8
5	11.	Assess mobile device forensic methodologies to extract and analyze evidence while maintaining data integrity.	5, 8
5	12.	Synthesize findings from various forensic investigations to provide comprehensive reports suitable for legal proceedings or internal audits.	1, 2, 8

CORE VALUES
The Core Values are a set of principles that guide in creating educational programs and environments at Edison State. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE
1. Introduction to Computer Forensics
2. Legal and Ethical Issues in Forensic Investigation
3. Evidence Collection and Chain of Custody
4. File Systems: NTFS, FAT32, and Linux
5. Windows Forensics
6. Linux/Unix Forensics
7. Data Recovery Techniques
8. Disk Imaging and Preservation
9. Network Forensics and Traffic Analysis
10. Forensic Tools: EnCase, FTK, Autopsy
11. Malware Analysis in Forensics
12. Forensic Findings, Reporting, and Documentation
13. Cloud Forensics
14. Mobile Device Forensics
15. Case Studies in Digital Forensics