Washtenaw Community College Comprehensive Report

CST 270 Computer Forensics
Effective Term: Spring/Summer 2024

Course Cover

College: Business and Computer Technologies
Division: Business and Computer Technologies
Department: Computer Science & Information Technology
Discipline: Computer Systems Technology
Course Number: 270
Org Number: 13400
Full Course Title: Computer Forensics
Transcript Title: Computer Forensics
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Course Change
Change Information:
Consultation with all departments affected by this course is required.
Course title
Course description
Pre-requisite, co-requisite, or enrollment restrictions
Outcomes/Assessment
Rationale: Update to reflect current integration of industry practices.
Proposed Start Semester: Winter 2024
Course Description: In this course, students will learn the practice of identification, handling, recovery, analysis and reporting of data on digital storage devices. Students will be introduced to identifying the types and locations of evidentiary data, from analysis of hexadecimal file structures to directory and registry location. Topics include analysis of file systems, evidence data, including recovery of password protected and deleted files, Internet artifacts, thumb files, shadow files, and basic registry analysis. Hands-on exercises guide discussions and reinforce the subject matter. Common forensic acquisition and analysis tools are introduced and utilized in this course, including Forensic Tool Kit Suite (FTK) Imager, FTK and Autopsy. Other tools include freeware password recovery and hexadecimal analysis programs that are widely used for forensic purposes. Legal considerations of this profession are also covered. The title of this course was previously Computer Forensics I.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

Prerequisite

CST 160 minimum grade "C+"

General Education

General Education Area 7 - Computer and Information Literacy

Assoc in Arts - Comp Lit
Assoc in Applied Sci - Comp Lit
Assoc in Science - Comp Lit

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Recognize the concepts and essential techniques used by digital recovery experts.
   Assessment 1
   Assessment Tool: Outcome-related final exam questions
   Assessment Date: Fall 2025
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: 70% of the students must score 75% or higher on the outcome-related questions.
   Who will score and analyze the data: Departmental faculty

2. Conduct an examination of a computer hard drive for lost, deleted or encrypted data.
   Assessment 1
   Assessment Tool: Outcome-related practical final exam questions
   Assessment Date: Fall 2025
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 70% of the students will score 75% or higher on the outcome-related questions
   Who will score and analyze the data: Departmental faculty

3. Conduct an examination of a forensically-sound image of a computer hard drive for evidence of unauthorized corporate use.
   Assessment 1
   Assessment Tool: Outcome-related practical final exam questions
   Assessment Date: Fall 2025
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 70% of the students will score 75% or higher on the outcome-related questions

Who will score and analyze the data: Departmental faculty

Course Objectives

1. Identify the type of computer software required for a specific task and perform the task.
2. Describe the handling process of a forensic analysis of a hard disk or other digital media to include:
   Securing the data without contamination or compromising the integrity.
   Creating a bit stream image of the original data.
3. Use software to examine an acquired image of a media drive to view in a sanitized and secure manner.
4. Demonstrate how to acquire evidence while adhering to reasonable practices of:
   Handling chain of custody.
   Collection, identification, transportation and storage.
   Documentation of the investigation.
5. Describe and demonstrate how to authenticate forensic evidence to include:
   Documenting the scene using pictures.
   Creating an electronic fingerprint of acquired data using hashing techniques.
6. Describe how and why it is necessary to create a copy of evidence data:
   Forensic backup
   Preservation of the original data
7. Describe and demonstrate how to recover data in a forensic evaluation of a hard disk or solid-state device:
   Slack data
   Recycle bin
   Deleted data
   Unallocated data
   Swap data
8. Provide written reports for instructor identified case image files.
9. Identify the legal considerations and limitations of the computer forensic profession.

New Resources for Course

Course Textbooks/Resources

Textbooks

J.A. Lewis. *Computer and Digital Forensics for Corporate and Law Enforcement, text Manual*, 8th ed. Lulu Press, 2023

Manuals

J.A. Lewis. Computer and Digital Forensics for Corporate and Law Enforcement, 8th Edition Exercise Manual, Lulu, 08-01-2023

Periodicals

Software

Equipment/Facilities

Level III classroom
Computer workstations/lab

Reviewer	Action	Date
Faculty Preparer:		
James Lewis	*Faculty Preparer*	*Apr 27, 2023*
Department Chair/Area Director:		
Scott Shaper	*Recommend Approval*	*May 05, 2023*
Dean:		
Eva Samulski	*Recommend Approval*	*May 12, 2023*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Nov 14, 2023*

Assessment Committee Chair:

Jessica Hale	*Recommend Approval*	*Nov 15, 2023*

Vice President for Instruction:

Brandon Tucker	*Approve*	*Nov 17, 2023*

Washtenaw Community College Comprehensive Report

CST 270 Computer Forensics I
Effective Term: Spring/Summer 2020

Course Cover

Division: Business and Computer Technologies
Department: Computer Science & Information Technology
Discipline: Computer Systems Technology
Course Number: 270
Org Number: 13400
Full Course Title: Computer Forensics I
Transcript Title: Computer Forensics I
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
Consultation with all departments affected by this course is required.
Pre-requisite, co-requisite, or enrollment restrictions
Objectives/Evaluation
Other:
Rationale: Changes to course based on assessment.
Proposed Start Semester: Fall 2019
Course Description: In this course, students will cover the identification, handling, recovery, analysis and reporting of data on digital storage devices. Students will be introduced to the type and location of data of evidentiary value, from identification of binary structure to directory location. Topics include analysis of volume and file system, evidence data including, recovery of password protected and deleted data, Internet artifacts, thumb files, shadow files, and basic registry analysis. Hands-on exercises guide discussions and reinforce the subject matter. Two primary forensic tools are introduced and utilized in this course: Forensic Tool Kit Suite (FTK) Imager, and FTK. Other tools include freeware programs that are widely used for forensic purposes. Legal considerations of this profession are also covered.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

Prerequisite

CST 160 minimum grade "C+"

General Education

General Education Area 7 - Computer and Information Literacy

Assoc in Arts - Comp Lit
Assoc in Applied Sci - Comp Lit
Assoc in Science - Comp Lit

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Recognize the concepts and essential techniques used by digital recovery experts.
   Assessment 1
   Assessment Tool: Final exam - short answer/multiple choice test
   Assessment Date: Winter 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Answers will be scored using an answer key.
   Standard of success to be used for this assessment: 80% of the students must score 75% or higher on the exam.
   Who will score and analyze the data: Departmental faculty

2. Conduct an examination of a computer hard drive for lost, deleted or encrypted data.
   Assessment 1
   Assessment Tool: Laboratory report of examination
   Assessment Date: Winter 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Lab report will be scored using a departmentally-developed rubric.
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher on the lab report.
   Who will score and analyze the data: Departmental faculty

3. Conduct an examination of a computer hard drive for evidence of unauthorized corporate use.
   Assessment 1
   Assessment Tool: Laboratory report of examination
   Assessment Date: Winter 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Lab report will be scored using a departmentally-developed rubric.
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher on the lab report.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. Identify the type of computer software required for a specific task and perform the task.
2. Describe the handling process of a forensic analysis of a hard disk or other digital media to include:
   Securing the data without contamination or compromising the integrity.
   Creating a bit stream image of the original data.
3. Use software to examine an acquired image of a media drive to view in a sanitized and secure manner.
4. Demonstrate how to acquire evidence while adhering to reasonable practices of:
   Handling chain of custody.
   Collection, identification, transportation and storage.
   Documentation of the investigation.
5. Describe and demonstrate how to authenticate forensic evidence to include:
   Documenting the scene using pictures.
   Creating an electronic fingerprint of acquired data using hashing techniques.
6. Describe how and why it is necessary to create a copy of evidence data:
   Forensic backup
   Preservation of the original data
7. Describe and demonstrate how to recover data in a forensic evaluation of a hard disk or solid state device:
   Slack data
   Recycle bin
   Deleted data
   Unallocated data
   Swap data
8. Provide written reports for instructor identified case image files.
9. Identify the legal considerations and limitations of the computer forensic profession.

New Resources for Course

Course Textbooks/Resources

Textbooks
J.A. Lewis. *Corporate Computer Forensics, Volume I Text Manual*, 5th ed. Lulu Press, 2010
Manuals
Periodicals
Software
Forensic Toolkit (FTK). Access Data, Latest ed.
College Provided.

Equipment/Facilities

Level III classroom
Computer workstations/lab

Reviewer	Action	Date
Faculty Preparer:		
James Lewis	*Faculty Preparer*	*Jun 26, 2019*
Department Chair/Area Director:		
Philip Geyer	*Recommend Approval*	*Jul 10, 2019*
Dean:		
Eva Samulski	*Recommend Approval*	*Jul 11, 2019*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Oct 17, 2019*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Oct 18, 2019*

Vice President for Instruction:

Kimberly Hurns *Approve* *Oct 18, 2019*

Washtenaw Community College Comprehensive Report

CST 270 Computer Forensics I
Effective Term: Winter 2018

Course Cover

Division: Business and Computer Technologies
Department: Computer Instruction
Discipline: Computer Systems Technology
Course Number: 270
Org Number: 13400
Full Course Title: Computer Forensics I
Transcript Title: Computer Forensics I
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Course Change
Change Information:
Consultation with all departments affected by this course is required.
Course description
Pre-requisite, co-requisite, or enrollment restrictions
Rationale: To keep current with evolving tools, techniques, discoveries and needs in industry.
Proposed Start Semester: Winter 2018
Course Description: In this course, students will cover the identification, handling, recovery, analysis and reporting of data on digital storage devices. Students will be introduced to the type and location of data of evidentiary value, from identification of binary structure to directory location. Topics include analysis of volume and file system, evidence data including, recovery of password protected and deleted data, Internet artifacts, thumb files, shadow files, and basic registry analysis. Hands-on exercises guide discussions and reinforce the subject matter. Two primary forensic tools are introduced and utilized in this course: Forensic Tool Kit Suite (FTK) Imager, and FTK. Other tools include freeware programs that are widely used for forensic purposes. Legal considerations of this profession are also covered. This course contains material previously taught in CSS 270. The title of this course was previously Data Recovery and Analysis.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

Prerequisite

CST 160 minimum grade "C+"

General Education

General Education Area 7 - Computer and Information Literacy

Assoc in Arts - Comp Lit
Assoc in Applied Sci - Comp Lit
Assoc in Science - Comp Lit

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Recognize the concepts and essential techniques used by digital recovery experts.
   Assessment 1
   Assessment Tool: Final exam - short answer/multiple choice test.
   Assessment Date: Fall 2017
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections once the course runs.
   Number students to be assessed: All students
   How the assessment will be scored: Answers will be scored using an answer key.
   Standard of success to be used for this assessment: 80% of the students must score 75% or higher on the exam.
   Who will score and analyze the data: Departmental faculty will score and analyze the data.

2. Conduct an examination of a computer hard drive for lost, deleted or encrypted data.
   Assessment 1
   Assessment Tool: Laboratory report of examination
   Assessment Date: Fall 2017
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Lab report will be scored using a departmentally-developed rubric.
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher on the lab report.
   Who will score and analyze the data: Departmental faculty

3. Conduct an examination of a computer hard drive for evidence of unauthorized corporate use.
   Assessment 1
   Assessment Tool: Laboratory report of examination
   Assessment Date: Fall 2017
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Lab report will be scored using a departmentally-developed rubric.
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   Documentation of the investigation.
5. Describe and demonstrate how to authenticate forensic evidence to include:
   Documenting the scene using pictures.
   Creating an electronic fingerprint of acquired data using hashing techniques.
6. Describe how and why it is necessary to create a copy of evidence data:
   Forensic backup
   Preservation of the original data
7. Describe and demonstrate how to recover data in a forensic evaluation of a hard or floppy disk to include:
   Slack data
   Recycle bin
   Deleted data
   Unallocated data
   Swap data
8. Provide written reports for each case image file.
9. Identify the legal considerations and limitations of the computer forensic profession.

New Resources for Course

Course Textbooks/Resources

Textbooks
J.A. Lewis. *Corporate Computer Forensics, Volume I Text Manual*, 5th ed. Lulu Press, 2010
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
James Lewis	*Faculty Preparer*	*Feb 09, 2017*
Department Chair/Area Director:		
Philip Geyer	*Recommend Approval*	*Feb 27, 2017*
Dean:		
Kimberly Hurns	*Recommend Approval*	*Feb 28, 2017*
Curriculum Committee Chair:		
David Wooten	*Recommend Approval*	*Mar 21, 2017*
Assessment Committee Chair:		
Ruth Walsh	*Recommend Approval*	*Mar 22, 2017*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Mar 23, 2017*