

uCertify

Course Outline

File System Forensic Analysis



15 Mar 2026

1. Exercises, Quizzes, Flashcards & Glossary
Number of Questions
2. Expert Instructor-Led Training
3. ADA Compliant & JAWS Compatible Platform
4. State of the Art Educator Tools
5. Award Winning Learning Platform (LMS)
6. Chapter & Lessons

Syllabus

Chapter 1: Introduction

Chapter 2: Digital Investigation Foundations

Chapter 3: Computer Foundations

Chapter 4: Hard Disk Data Acquisition

Chapter 5: Volume Analysis

Chapter 6: PC-based Partitions

Chapter 7: Server-based Partitions

Chapter 8: Multiple Disk Volumes

Chapter 9: File System Analysis

Chapter 10: FAT Concepts and Analysis

Chapter 11: FAT Data Structures

Chapter 12: NTFS Concepts

Chapter 13: NTFS Analysis

Chapter 14: NTFS Data Structures

Chapter 15: Ext2 and Ext3 Concepts and Analysis

Chapter 16: Ext2 and Ext3 Data Structures

Chapter 17: UFS1 and UFS2 Concepts and Analysis

Chapter 18: UFS1 and UFS2 Data Structures

Chapter 19: Appendix A: The Sleuth Kit and Autopsy

Videos and How To

7. Live labs

Lab Tasks

Here's what you get

1. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

71
EXERCISES

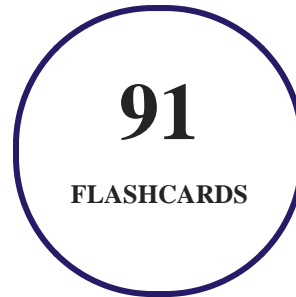
2. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.

225
QUIZ

3. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



4. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



5. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

6. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

7. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

8. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
 1. Best Postsecondary Learning Solution
- **2015**
 1. Best Education Solution

2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution
3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

- **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

- **2018**

1. Best Higher Education LMS or Learning Platform
2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**

1. Best Virtual Learning Solution
2. Best Content Authoring Development or Curation Solution
3. Best Higher Education Learning Management Solution (LMS)

- **2020**

1. Best College and Career Readiness Solution
2. Best Cross-Curricular Solution
3. Best Virtual Learning Solution

9. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Introduction

- Roadmap
- Scope of Course

Chapter 2: Digital Investigation Foundations

- Digital Investigations and Evidence
- Digital Crime Scene Investigation Process
- Data Analysis
- Overview of Toolkits

- Summary

Chapter 3: Computer Foundations

- Data Organization
- Booting Process
- Hard Disk Technology
- Summary

Chapter 4: Hard Disk Data Acquisition

- Introduction
- Reading the Source Data
- Writing the Output Data
- A Case Study Using dd
- Summary

Chapter 5: Volume Analysis

- Introduction
- Background
- Analysis Basics

- Summary

Chapter 6: PC-based Partitions

- DOS Partitions
- Apple Partitions
- Removable Media
- Summary

Chapter 7: Server-based Partitions

- BSD Partitions
- Sun Solaris Slices
- GPT Partitions
- Summary

Chapter 8: Multiple Disk Volumes

- RAID
- Disk Spanning
- Summary

Chapter 9: File System Analysis

- What Is a File System?
- File System Category
- Content Category
- Metadata Category
- File Name Category
- Application Category
- Application-level Search Techniques
- Specific File Systems
- Summary

Chapter 10: FAT Concepts and Analysis

- Introduction
- File System Category
- Content Category
- Metadata Category
- File Name Category
- The Big Picture

- Other Topics
- Summary

Chapter 11: FAT Data Structures

- Boot Sector
- FAT32 FSINFO
- FAT
- Directory Entries
- Long File Name Directory Entries
- Summary

Chapter 12: NTFS Concepts

- Introduction
- Everything is a File
- MFT Concepts
- MFT Entry Attribute Concepts
- Other Attribute Concepts
- Indexes

- Analysis Tools
- Summary

Chapter 13: NTFS Analysis

- File System Category
- Content Category
- Metadata Category
- File Name Category
- Application Category
- The Big Picture
- Other Topics
- Summary

Chapter 14: NTFS Data Structures

- Basic Concepts
- Standard File Attributes
- Index Attributes and Data Structures
- File System Metadata Files
- Summary

Chapter 15: Ext2 and Ext3 Concepts and Analysis

- Introduction
- File System Category
- Content Category
- Metadata Category
- File Name Category
- Application Category
- The Big Picture
- Other Topics
- Summary

Chapter 16: Ext2 and Ext3 Data Structures

- Superblock
- Group Descriptor Tables
- Block Bitmap
- Inodes
- Extended Attributes

- Directory Entry
- Symbolic Link
- Hash Trees
- Journal Data Structures
- Summary

Chapter 17: UFS1 and UFS2 Concepts and Analysis

- Introduction
- File System Category
- Content Category
- Metadata Category
- File Name Category
- The Big Picture
- Other Topics
- Summary

Chapter 18: UFS1 and UFS2 Data Structures

- UFS1 Superblock
- UFS2 Superblock

- Cylinder Group Summary
- UFS1 Group Descriptor
- UFS2 Group Descriptor
- Block and Fragment Bitmaps
- UFS1 Inodes
- UFS2 Inodes
- UFS2 Extended Attributes
- Directory Entries
- Summary

Chapter 19: Appendix A: The Sleuth Kit and Autopsy

- The Sleuth Kit
- Autopsy

10. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations

- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Digital Investigation Foundations

- Utilizing a Forensic Tool

Computer Foundations

- Analyzing Hard Disk Geometry for Forensic Investigation

Hard Disk Data Acquisition

- Performing Forensic Imaging and Integrity Verification of a Disk Image Using dd

PC-based Partitions

- Analyzing Partition Structures with fdisk and mmls
- Analyzing Removable Media and CD Images

Server-based Partitions

- Analyzing GPT Disk Structure Using mmls and dd Commands

Multiple Disk Volumes

- Configuring RAID

File System Analysis

- Analyzing and Recovering Files Using the File Name Category

- Evaluating Data Carving and File Type Sorting

FAT Concepts and Analysis

- Exploring FAT File System Metadata and Directory Entries

NTFS Concepts

- Exploring NTFS Metadata and File Entries with Analysis Tools

NTFS Analysis

- Exploring and Analyzing NTFS File System Metadata Files
- Investigating the \$Secure Metadata File in NTFS

NTFS Data Structures

- Exploring NTFS Index Attributes and Data Structures

Ext2 and Ext3 Concepts and Analysis

- Discovering and Analyzing an ExtX File System on a Disk Without a Partition Table
- Tracking a Moved File and Determining File Deletion Order in a Linux EXT3 File System

Ext2 and Ext3 Data Structures

- Analyzing Block Bitmap and Inode Information in an ext3 File System Using TSK
- Analyzing Journals and Indirect Blocks in an ext3 File System Using TSK

Here's what you get

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LIVE LABS

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VIDEO TUTORIALS

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MINUTES

You can't stay away! Get



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