uCertify

Course Outline

Fluency with IT: Skills, Concepts, & Capabilities



28 Mar 2024

1. Course Objective
2. Pre-Assessment
3. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions
4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
7. Award Winning Learning Platform (LMS)
8. Chapter & Lessons

   Syllabus

   Chapter 1: Defining Information Technology

   Chapter 2: Exploring the Human-Computer Interface

   Chapter 3: The Basics of Networking

   Chapter 4: A Hypertext Markup Language Primer

   Chapter 5: Locating Information on the WWW

   Chapter 6: An Introduction to Debugging

   Chapter 7: Representing Information Digitally

   Chapter 8: Representing Multimedia Digitally

   Chapter 9: Principles of Computer Operations

   Chapter 10: Algorithmic Thinking

   Chapter 11: Social Implications of IT

   Chapter 12: Privacy and Digital Security

   Chapter 13: The Basics of Spreadsheets

   Chapter 14: Advanced Spreadsheets for Planning

   Chapter 15: Introduction to Database Concepts

   Chapter 16: A Case Study in Database Organization

   Chapter 17: Fundamental Concepts Expressed in JavaScript

   Chapter 18: A JavaScript Program

Chapter 19: Programming Functions

Chapter 20: Iteration Principles

Chapter 21: A Case Study in Algorithmic Problem Solving

Chapter 22: Limits to Computation

Chapter 23: A Fluency Summary

Chapter 24: Appendix A

Chapter 25: Appendix B: RSA Public Key Cryptosystem

Chapter 26: Appendix C: iDiary: Tags and Templates

Chapter 27: Appendix D

Chapter 28: Appendix E: The Bean Counter Program

Chapter 29: Appendix F: myApps Page

Chapter 30: Appendix G: Smooth Motion Program

Videos and How To

9. Practice Test

   Here's what you get

   Features

10. Post-Assessment

1. Course Objective

The Fluency with IT: Skills, Concepts, & Capabilities course is targeted at students who are already familiar with computers, the Internet, and the World Wide Web with a deeper understanding of the broad capabilities of technology. The computer fluency course covers topics such as information technology, human-computer interface, networking fundamentals, information location on the world wide web, and more. This course teaches computer skills and provides complete coverage of all concepts required for information technology.

2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

3. Quizzes

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.



4. 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.



5. 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.



6. 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.

7. 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.

8. 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.

9. 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

10. 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: Defining Information Technology

- Computation's Greatest Hits
- Terms of Endearment
- Computers, Software, Algorithms
- The Words for Ideas
- Summary
- Short Answers
- Exercises

Chapter 2: Exploring the Human-Computer Interface

- A Few Useful Concepts
- Perfect Reproduction
- What We See and What We Think
- Summary
- Short Answers
- Exercises

Chapter 3: The Basics of Networking

- Comparing Communication Types
- The Medium of the Message
- The World Wide Web
- File Structure
- Summary
- Short Answers
- Exercises

Chapter 4: A Hypertext Markup Language Primer

- Marking Up with HTML
- Lab Practice I
- Structuring Documents
- Lab Practice II
- Get Into Style with CSS
- Marking Links and Images
- Referring to Files
- Span, Lists, Tables, and Boxes
- Cascading Style Sheets
- Styling with Class
- Hovering Above Links
- HTML Wrap–Up
- Summary
- Short Answer
- Exercises

Chapter 5: Locating Information on the WWW

- Web Search Fundamentals

- Advanced Searches
- Web Searching
- Authoritative Information
- Truth or Fiction?
- Summary
- Short Answer
- Exercises

Chapter 6: An Introduction to Debugging

- Precision: The High Standards of Computing
- Debugging: What's the Problem?
- A Dialog About Debugging
- Debugging Recap
- Fixing HTML Bugs: A Case Study
- No Printer Output: A Classic Scenario
- Ensuring the Reliability of Software
- Community Debugging
- Summary

- Short Answers
- Exercises

Chapter 7: Representing Information Digitally

- Digitizing Discrete Information
- Information Representation
- Binary and Hex
- Digitizing Numbers in Binary
- Digitizing Text
- UTF-8
- The Metadata and the OED
- Summary
- Short Answer
- Exercises

Chapter 8: Representing Multimedia Digitally

- Digitizing Color
- Computing on Representations
- Digitizing Sound

- Digital Images and Video
- Optical Character Recognition
- Multimedia Challenges
- Bits Are It
- Summary
- Short Answers
- Exercises

Chapter 9: Principles of Computer Operations

- There's an App for That
- Software Isn't So Hard
- Instruction Execution Engine
- The Program Counter: The PC's PC
- Instruction Execution
- Translation
- Integrated Circuits
- How Semiconductor Technology Works
- Combining the Ideas

- Summary
- Short Answer
- Exercises

Chapter 10: Algorithmic Thinking

- Algorithms
- Algorithms—A Basic Concept
- A Closer Look
- Doing the Right Thing
- Summary
- Short Answer
- Exercises

Chapter 11: Social Implications of IT

- The Power of the Crowd
- Out on Good Behavior
- Expect the Unexpected
- Creating Good Passwords

- Spam
- Scams
- Protecting Intellectual Property
- Creative Commons
- Summary
- Short Answer
- Exercises

Chapter 12: Privacy and Digital Security

- Privacy and Technology
- A Privacy Definition
- Enjoying the Benefits of Privacy
- Fair Information Practices
- Is There No Privacy?
- Tracking
- Cookies
- Digital Security
- Prevention

- Encryption
- Redundancy Is Very, Very, Very Good
- Summary
- Short Answer
- Exercises

Chapter 13: The Basics of Spreadsheets

- Arranging Information
- Computing with Spreadsheets
- Daily Spreadsheets
- Importing Data
- Summary
- Short Answer
- Exercise

Chapter 14: Advanced Spreadsheets for Planning

- Designing a Spreadsheet
- Conditional Formatting
- Conditional Formulas

- Naming: Symbolic Reference
- What If Analysis
- Analyzing Data Using Filtering
- Summary
- Short Answer
- Exercises

Chapter 15: Introduction to Database Concepts

- Differences Between Tables and Databases
- XML: A Language for Metadata Tags
- Tables and Entities
- The Science of Tables
- SQL: The Language of Databases
- Structure of a Database
- Summary
- Short Answer
- Exercises

Chapter 16: A Case Study in Database Organization

- Thinking About a Personal Database
- A Preliminary Exercise
- The iDiary Database
- Using the iDiary Daily
- Summary
- Short Answer
- Exercises

Chapter 17: Fundamental Concepts Expressed in JavaScript

- Overview: Programming Concepts
- Names, Values, and Variables
- Three Basic Data Types of JavaScript
- The Assignment Statement
- Lab Practice
- An Expression and Its Syntax
- A Conditional Statement
- The Espresso Program
- Summary

- Short Answer
- Exercises

Chapter 18: A JavaScript Program

- Preliminaries
- Background for the UI
- Creating the Graphical User Interface
- Event-Based Programming
- Critiquing the Bean Counter
- Bean Counter Recap
- Summary
- Short Answer
- Exercises

Chapter 19: Programming Functions

- Anatomy of a Function
- Forms and Functions
- Writing Functions, Using Functions

- Customizing Pages
- Making a Web-Based Phone App
- Social Functions
- Summary
- Short Answer
- Exercises

Chapter 20: Iteration Principles

- Iteration: Play It Again, Sam
- JavaScript Rules for for Loops
- Experiments with Flipping Coins
- Indexing
- Arrays
- It's Magic
- The Busy Animation
- Not So Busy Animation
- Summary
- Short Answer

- Exercises

Chapter 21: A Case Study in Algorithmic Problem Solving

- The Smooth Motion Application
- Planning Smooth Motion
- Build the Basic Web Page UI
- Animate the Grid
- The Best Laid Plans . . .
- Build Controls
- Sense the Keys
- Staircase Detection
- Assemble Overall Design
- Primp the Design
- Summary
- Short Answer
- Exercises

Chapter 22: Limits to Computation

- Can Computers Think?

- Acting Intelligently?
- Watson
- Acting Creatively?
- The Universality Principle
- More Work, Slower Speed
- Are Best Algorithms All Fast?
- Summary
- Short Answer
- Exercises

Chapter 23: A Fluency Summary

- Two Big Computing Ideas
- Fluency: Less Is More
- Lifelong IT Learning
- Shifting for Yourself
- Short Answer
- Exercises

Chapter 24: Appendix A

- HTML5 Reference

Chapter 25: Appendix B: RSA Public Key Cryptosystem

Chapter 26: Appendix C: iDiary: Tags and Templates

Chapter 27: Appendix D

- JavaScript Programming Rules

Chapter 28: Appendix E: The Bean Counter Program

Chapter 29: Appendix F: myApps Page

Chapter 30: Appendix G: Smooth Motion Program

11. Practice Test

Here's what you get

100	2	100
PRE-ASSESSMENTS QUESTIONS	FULL LENGTH TESTS	POST-ASSESSMENTS QUESTIONS

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

12. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

GET IN TOUCH:

3187 Independence Drive
Livermore, CA 94551,
United States

+1-415-763-6300

support@ucertify.com

www.ucertify.com