uCertify

Course Outline

Coding Basics

04 Aug 2025

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: What Is Coding?

   Chapter 3: Working with Programming Languages and IDEs

   Chapter 4: When Things Go Wrong

   Chapter 5: Orchestra

   Chapter 6: Foley Sound Generator

   Chapter 7: Lucky Numbers

   Chapter 8: Mondrian Art Toy

   Chapter 9: Emoji Explosion

   Chapter 10: Smelephant

   Chapter 11: Mascot Greeter

   Chapter 12: Weird Text Message

   Chapter 13: Vote Machine

   Chapter 14: Happy New Year!

   Chapter 15: Light Theremin

   Chapter 16: Magic 8-Ball

   Chapter 17: Sock Sort

   Chapter 18: Evil Olive

   Chapter 19: Sushi Matchup

   Chapter 20: Creating and Sharing

Chapter 21: Where to Go from Here

Videos and How To

1. 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.

2. 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.

3. 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.

4. 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

5. 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

- About This Course

- Foolish Assumptions
- Icons Used in This Course
- Where to Go from Here

Chapter 2: What Is Coding?

- What Languages Will I Use?
- What Does a Computer Program Look Like?
- A Hello World! Example
- Recipe for a Program
- Planning a Program
- Prepping Yourself to Code
- Coding Cool Stuff

Chapter 3: Working with Programming Languages and IDEs

- Basic IDE Setup and Navigation
- Adding Hardware
- Getting Fancier with User Interfaces

Chapter 4: When Things Go Wrong

- Syntax Errors
- Logic Errors
- Debugging Scratch Programs
- Debugging App Lab Programs
- Debugging MakeCode Programs
- Commenting Out Code when Debugging

Chapter 5: Orchestra

- Brainstorm
- Start a New Project
- Add a Backdrop
- Add Instrument Sprites
- Add a Singer Sprite and Modify Its Costume
- Code Each Instrument to Play a Sound
- Save, Test, and Debug Your Program
- Share Your Program with the World
- Enhance Your Toy

Chapter 6: Foley Sound Generator

- Brainstorm
- Start a New Project
- Add a Background
- Add Sound and Stop Sounds Buttons
- Code the Sound Buttons to Play
- Code the Stop Sounds Button to Stop Sounds
- Save, Test, and Debug Your App
- Share Your App with the World
- Enhance Your App

Chapter 7: Lucky Numbers

- Brainstorm
- Start a New Project
- Code Button A
- Code Button B
- Save, Test, and Debug Your Program
- Transfer Your Program to the micro:bit
- Share Your Program with the World
- Enhance Your Toy

Chapter 8: Mondrian Art Toy

- Brainstorm
- Start a New Project
- Add a Background Color
- Add a Title Label
- Add Fill and Clear Buttons
- Code a Canvas and Paintbrush
- Code to Draw a Rectangle
- Code to Fill Rectangles with Color
- Code a Clear Button to Erase a Painting
- Save, Test, and Debug Your App
- Share Your App with the World
- Enhance Your App

Chapter 9: Emoji Explosion

- Brainstorm
- Start a New Project
- Add a Backdrop

- Add an Emoji Sprite
- Code the Stage to Play a Sound
- Code the Green Flag for the Emoji Sprite
- Code the makeEmojis Block
- Code when I start as a clone for the Emoji Sprite
- Code the explode Block for the Emoji Clones
- Save, Test, and Debug Your Program
- Share Your Program with the World
- Enhance Your Animated Scene

Chapter 10: Smelephant

- Brainstorm
- Start a New Project
- Add a Backdrop
- Add a Smelephant Sprite
- Code the Green Flag Code of the Smelephant
- Code the Smelephant's Up Arrow Key Control
- Code Arrow Keys for Moving the Smelephant Down, Left, and Right

- Add a Flower Sprite
- Code the Green Flag for the Flower Sprite
- Code the makeFlowers Block
- Code when I start as a clone for the Flower Sprite
- Code the getSmelled Block for the Flower Clones
- Add a Monkey Sprite
- Code the Green Flag for the Monkey
- Code the chase Block
- Save, Test, and Debug Your Program
- Share Your Program with the World
- Enhance Your Animated Scene

Chapter 11: Mascot Greeter

- Brainstorm
- Start a New Project
- Add a Backdrop
- Add a Mascot Sprite
- Add Text-to-Speech Commands
- Code the Mascot Sprite to Greet

- Save, Test, and Debug Your Program
- Share Your Program with the World
- Enhance Your Program

Chapter 12: Weird Text Message

- Brainstorm
- Start a New Project
- Name the Input Screen for the App
- Add a Background Color to the Input Screen
- Add an Instruction Label
- Add Category Labels and Text Input Fields
- Add a Button to Trigger the Action
- Add and Name an Output Screen
- Add a Message Image to the Output Screen
- Add a Message Label to the Output Screen
- Code the App
- Save, Test, and Debug Your App
- Share Your App with the World

- Enhance Your App

Chapter 13: Vote Machine

- Brainstorm
- Start a New Project
- Rename the Screen
- Add a Title Label to the App
- Add Images for the Candidates
- Add Labels for Each Candidate
- Code Variables for the First Candidate
- Code the First Candidate to Register a Vote
- Code Variables for the Remaining Candidates
- Code Remaining Candidates to Register Votes
- Save, Test, and Debug Your App
- Share Your App with the World
- Enhance Your App

Chapter 14: Happy New Year!

- Brainstorm

- Start a New Project
- Add a Backdrop
- Add a Glittery Ball
- Code the Ball to Drop
- Create a Countdown Variable
- Add Text-to-Speech and Translate Commands
- Add a Cheer Sound to the Ball Sprite
- Code the Countdown Clock
- Save, Test, and Debug Your Program
- Share Your Program with the World
- Enhance Your Toy

Chapter 15: Light Theremin

- Brainstorm
- Start a New Project
- Code the First Sound Conditional
- Code More Sound Conditionals
- Save, Test, and Debug Your Program
- Transfer Your Program to the micro:bit

- Share Your Program with the World
- Enhance Your Toy

Chapter 16: Magic 8-Ball

- Brainstorm
- Start a New Project
- Code on start
- Code on shake
- Save, Test, and Debug Your Program
- Transfer Your Program to the micro:bit
- Share Your Program with the World
- Enhance Your Toy

Chapter 17: Sock Sort

- Brainstorm
- Start a New Project
- Add a Backdrop
- Add Red and White Sock Sprites
- Add Mixed, Red, and White Lists

- Code the Green Flag (Create List)
- Code the clearLists Block
- Code the Sorting Process
- Save, Test, and Debug Your Program
- Share Your Program with the World
- Enhance Your Program

Chapter 18: Evil Olive

- Brainstorm
- Start a New Project
- Add a Background Image to the Screen
- Add an Instruction Label
- Add a Text Input Field
- Create and Add Evil Olive to the Screen
- Add a Message Label to the Screen
- Code the App
- Save, Test, and Debug Your App
- Share Your App with the World

- Enhance Your App

Chapter 19: Sushi Matchup

- Brainstorm
- Start a New Project
- Draw a Toy Interface on the Backdrop
- Add a Button Sprite
- Add Reels Sprites
- Add a Status Sprite
- Code the Button to Trigger the Spin
- Create wear Variables
- Add Sounds
- Code the Reels to Spin
- Code the checkMatch Block
- Code the status Sprite
- Save, Test, and Debug Your Program
- Share Your Program with the World
- Enhance Your Program

Chapter 20: Creating and Sharing

- Programming Your Own Ideas
- Sharing and Showcasing Your Work

Chapter 21: Where to Go from Here

- Upping Your Game
- Next Steps

You can’t stay away! Get

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