uCertify

Course Outline

Software Engineering for Beginners

09 May 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: Introduction

   Chapter 2: Software Engineering from 20,000 Feet

   Chapter 3: Before the Beginning

   Chapter 4: The Team

   Chapter 5: Project Management

   Chapter 6: Requirements Gathering

   Chapter 7: High-Level Design

   Chapter 8: Low-Level Design

   Chapter 9: Security Design

   Chapter 10: User Experience Design

   Chapter 11: Programming

   Chapter 12: Algorithms

   Chapter 13: Programming Languages

   Chapter 14: Testing

   Chapter 15: Deployment

   Chapter 16: Metrics

   Chapter 17: Maintenance

   Chapter 18: Predictive Models

1. 📖 Course Objective

The Software Engineering for Beginners course unlocks your potential to develop cutting-edge software solutions. With comprehensive design, coding, testing, and project management coverage, this course equips you with the essential skills needed to excel in the industry. You'll learn from real examples that lead to real results. It contains interactive lessons with knowledge checks and quizzes, and hands-on labs to build and iterate on your code like a software developer.

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. ⊕ 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.

131
EXERCISES

4. ⏱ 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.

60

QUIZZES
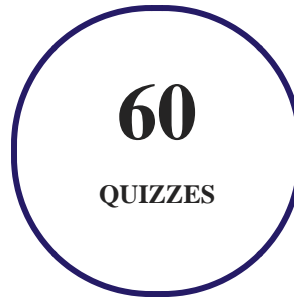
5. ⚡ flashcards

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.

522

FLASHCARDS

6. 📖 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.

522

GLOSSARY OF TERMS

7. 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.

8. 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.

9. 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.

10. 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

11. 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

- WHAT IS SOFTWARE ENGINEERING?

- WHY IS SOFTWARE ENGINEERING IMPORTANT?

- WHO SHOULD READ THIS COURSE?

Chapter 2: Software Engineering from 20,000 Feet

- REQUIREMENTS GATHERING

- HIGH-LEVEL DESIGN

- LOW-LEVEL DESIGN

- DEVELOPMENT

- TESTING

- DEPLOYMENT

- MAINTENANCE

- WRAP-UP

- EVERYTHING ALL AT ONCE

- SUMMARY

- WHAT YOU LEARNED IN THIS LESSON

Chapter 3: Before the Beginning

- DOCUMENT MANAGEMENT

- HISTORICAL DOCUMENTS

- EMAIL

- PHISHING AND SPOOFING

- SOCIAL ENGINEERING ATTACKS

- CRAPWARE

- PASSWORD ATTACKS

- USER ACCESS

- COUNTERMEASURES

- CYBER INSURANCE

- SUMMARY

- WHAT YOU LEARNED IN THIS LESSON

Chapter 10: User Experience Design

- DESIGN MINDSET

- DESIGN GUIDELINES

- FORM DESIGN

- SUMMARY

- WHAT YOU LEARNED IN THIS LESSON

Chapter 11: Programming

Chapter 18: Predictive Models

- MODEL APPROACHES

- PREREQUISITES

- PREDICTIVE AND ADAPTIVE

- WATERFALL

- WATERFALL WITH FEEDBACK

- SASHIMI

- INCREMENTAL WATERFALL

- V-MODEL

- SOFTWARE DEVELOPMENT LIFE CYCLE

- SUMMARY

- WHAT YOU LEARNED IN THIS LESSON

Chapter 19: Iterative Models

- ITERATIVE VS. PREDICTIVE

- ITERATIVE VS. INCREMENTAL

- PROTOTYPES

- SPIRAL

- ALGORITHMS

- TECH TOYS

- SUMMARY

- WHAT YOU LEARNED IN THIS LESSON

12. Practice Test

Here's what you get

45	45
PRE-ASSESSMENTS QUESTIONS	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.

13. 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

Software Engineering from 20,000 Feet

- Understanding Software Development Project Phases

Before the Beginning

- Sending an Email Using Confidential Mode
- Documenting and Commenting on the HTML5 Code

The Team

- Analyzing Team-Building Features

Project Management

- Creating a PERT Chart
- Creating a Gantt Chart

Requirements Gathering

- Understanding the FURPS+ Categories
- Understanding Requirements Techniques and Methods

High-Level Design

- Understanding the Class Diagram Visibility Symbols

Low-Level Design

- Normalizing Unnormalized Data to 1NF
- Normalizing Data from 1NF to 2NF
- Normalizing Data from 2NF to 3NF

User Experience Design

- Customizing the Word's Ribbon Interface
- Understanding Printer Configuration
- Designing a Form

Programming

- Using the Sorting Algorithm
- Implementing Software Programming Using Factorial

Algorithms

- Understanding Recursion
- Implementing Caching Using ARP

Programming Languages

- Using a Fourth-Generation Language to Retrieve Specific Data
- Using an Object-Oriented Language to Create a Class

Testing

- Understanding the Testing Techniques

Metrics

- Creating an Ishikawa Diagram

Maintenance

- Understanding the Types of Maintenance Tasks

Predictive Models

- Understanding the Waterfall Model

Iterative Models

- Understanding the Spiral Model

RAD

- Understanding the RAD Model

Here's what you get

27	12	18
LIVE LABS	**VIDEO TUTORIALS**	**MINUTES**

14. 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