uCertify

Course Outline

System Analysis and Design

13 May 2024

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1. Course Objective

The System Analysis and Design course is tailored to equip individuals with the essential knowledge and skills required to excel in the dynamic field of Information Technology. Whether you are new to the industry or seeking to enhance your expertise, our comprehensive program will empower you to thrive in the world of system analysis and design. The course covers a wide range of topics essential for success in the field of Information Technology, including: Introduction to System Analysis and Design, Requirements Gathering, System Modeling, System Design, Project Management, Implementation and Testing.

2. Pre-Assessment

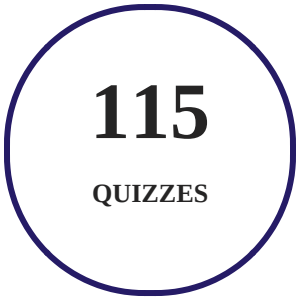
Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

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.

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.



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.

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.

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: Preface

- Purpose of This Course
- Organization of This Course

Chapter 2: The Systems Analyst and Information Systems Development

- Introduction
- The Systems Analyst
- The Systems Development Life Cycle
- Project Identification and Initiation
- Feasibility Analysis
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES
- APPENDIX 1A DETAILED ECONOMIC FEASIBILITY ANALYSIS FOR DR?NTEQ

Chapter 3: Project Selection and Management

- Introduction
- Project Selection
- Creating the Project Plan
- Staffing the Project
- Managing and Controlling the Project

- Applying the Concepts at Dr?nTeq
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 4: Requirements Determination

- Introduction
- The Analysis Phase
- Requirements Determination
- Requirements Elicitation Techniques
- Requirements Analysis Strategies
- Applying the Concepts at Dr?nTeq
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 5: Understanding Processes with Use Cases and Process Models

- Introduction
- What Is a Use Case?
- Use Case Formats and Elements
- Applying Use Cases
- Creating Use Cases
- Applying the Concepts at Dr?nTeq
- Data Flow Diagrams
- Creating Data Flow Diagrams
- Applying the Concepts at Dr?nTeq
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 6: Data Modeling

- Introduction
- The Entity Relationship Diagram
- Creating an Entity Relationship Diagram

- Validating an Entity Relationship Diagram
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES
- Inventory Order
- APPENDIX 5A: NORMALIZING THE DATA MODEL

Chapter 7: Moving into Design

- Introduction
- Transition from Requirements to Design
- System Acquisition Strategies
- Influences on the Acquisition Strategy
- Selecting an Acquisition Strategy
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 8: Architecture Design

- Introduction
- Elements of an Architecture Design
- Creating an Architecture Design
- Hardware and Software Specification
- Applying the Concepts at Dr?nTeq
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 9: User Interface Design

- Introduction
- The Usability Concept
- Principles for User Interface Design
- User Interface Design Process
- Navigation Design

- Input Design
- Output Design
- Applying the Concepts at Dr?nTeq
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 10: Program Design

- Introduction
- Moving from Logical to Physical Process Models
- Designing Programs
- Structure Chart
- Program Specification
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 11: Data Storage Design

- Introduction
- Data Storage Formats
- Moving from Logical to Physical Data Models
- Optimizing Data Storage
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 12: Moving into Implementation

- Introduction
- Managing the Programming Process
- Testing
- Developing Documentation
- Applying the Concepts at Dr?nTeq
- LESSON REVIEW
- QUESTIONS

- EXERCISES
- MINICASES

Chapter 13: Transition to the New System

- Introduction
- Making the Transition to the New System
- The Migration Plan
- Postimplementation Activities
- Applying the Concepts at Dr?nTeq
- LESSON REVIEW
- QUESTIONS
- EXERCISES
- MINICASES

Chapter 14: Agile Development Methods

- Introduction
- Origins of Agile
- Evolution of Agile Development

- Scrum
- Other Types of Agile Methodologies
- Comparing the SDLC with Agile Methodologies
- LESSON REVIEW
- QUESTIONS
- EXERCISES

12. Practice Test

Here's what you get

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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. Performance Based Labs

uCertify's performance-based labs are simulators that provides virtual environment. Labs deliver hands on experience with minimal risk and thus replace expensive physical labs. uCertify Labs are cloud-based, device-enabled and can be easily integrated with an LMS. Features of uCertify labs:

- Provide hands-on experience in a safe, online environment
- Labs simulate real world, hardware, software & CLI environment
- Flexible and inexpensive alternative to physical Labs
- Comes with well-organized component library for every task
- Highly interactive - learn by doing
- Explanations and remediation available
- Videos on how to perform

Lab Tasks

- Understanding the Systems Analyst Skills
- Understanding Economic Feasibility
- Identifying Costs and Benefits
- Understanding CASE
- Understanding the Requirement of a Systems Development Project
- Understanding the Nonfunctional Requirements Types
- Understanding Elicitation Techniques
- Understanding the Interview Questions

- Understanding the DFD elements
- Understanding DFD
- Creating an ERD
- Understanding Outsourcing
- Understanding the Client-Server Architecture
- Understanding the Operational Requirements
- Understanding the Principle of User Interface Design
- Understanding Common Android Touch Screen Hand Gestures
- Understanding the Common Approaches to Interface Evaluation
- Understanding the Message Types
- Understanding the Menu Types
- Understanding the Approaches for Entering Inputs into a Computer System
- Understanding the Selection Control Types
- Understanding the Validation Types
- Understanding the Coupling Types
- Understanding the Structure Chart Elements
- Understanding the Cohesion Types
- Understanding File Types
- Understanding the Multidimensional Database
- Understanding the Relational Database
- Understanding the Hierarchical and Network Databases
- Understanding the Test Types
- Identifying the Test Types
- Selecting the Conversion Strategy
- Understanding Sprint Planning
- Understanding Scrum

Here's what you get

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PERFORMANCE BASED LAB

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.

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