CUSTOMIZED TEACHER ASSESSMENT BLUEPRINT

COMPUTER PROGRAMMING

Test Code: 5906
Version: 01

Specific Competencies and Skills Tested in this Assessment:

Analyze Programming Problems and Flowchart Solutions
Analyze user requirements for a given outcome
Determine input and output formats for a program
Determine the flow of data through network
Identify and describe a data flow diagram
Identify and describe a process logic diagram
Describe the system development cycle (i.e., code management, ongoing revisions)

Design Program Solutions
Determine where data is to be accessed/stored
Design data storage and layout
Apply principles of quality, efficient programming
Explain the importance of a design review
Apply implementation plans for a new system
Assess ongoing impact of existing systems

Code Programs
Determine the variables and data types for a program
Prepare and code routines using structured logic
Identify various programming languages
Apply appropriate computer language syntax
Explain unit testing requirements
Document appropriate comments and programmer notes

Computer Programming (continued)

Test Programs
Explain system testing requirements
Design and analyze test plan for use in program testing
Test programs and evaluate results for accuracy
Correct programming errors discovered during testing
Identify appropriate debugging tools

Maintain Programs
Change existing programs when requirements change
Correct existing program errors
Update documentation for existing programs
Provide user instructions on program modifications

Complete User Documentation and Technical Writing
Develop documentation narrative
Document data use and storage
Develop online help for users

General Information and Concepts
Apply general design and programming concepts
Identify various hardware platforms and run-time environments
Identify human aspects in information systems
Identify general information technology (IT) definitions and terms
Adhere to best programming practices and methodologies
Exhibit understanding of data hierarchy, access methods, and manipulation

Computer Programming (continued)

Written Assessment:

Administration Time: 3 hours
Number of Questions: 160

Areas Covered:

15%	Analyze Programming Problems and Flowchart Solutions
13%	Design Program Solutions
19%	Code Programs
14%	Test Programs
9%	Maintain Programs
7%	Complete User Documentation and Technical Writing
23%	General Information and Concepts

Sample Questions:

Data that is represented in a tagged-format language is
A. delimited
B. fixed-length
C. XML
D. binary

Large programs used by many different people should be stored on a
A. server
B. personal computer
C. DVD drive
D. tape backup

Each module in top-down programming should
A. be well distributed
B. represent a loop
C. represent a program function
D. contain a procedure call

Test data should be developed that will
A. execute the program properly the first time
B. validate the operating system
C. contain only invalid data
D. generate the answers wanted by users

Documentation standards should be
A. changed frequently
B. defined up front
C. dictated by the end users
D. determined by the programmer

Performance Assessment:

Administration Time: 3 hours
Number of Jobs: 2

Areas Covered:

61% **Write a Program**
Create an order form to track CD purchases from a website, set up a GUI panel-type form, enter each set of given test data, perform appropriate calculations, display results in a table on the GUI panel, print out source code and output report.

39% **Design Solution Logic**
Read the provided programming situation; create a flowchart of pseudocode that solves the programming situation.

Sample Job: *Design Solution Logic*

Maximum Job Time: 30 minutes

Participant Activity: The participant will be provided a programming situation. Create a flowchart or pseudocode that solves the programming situation (problem definition).