

# COBOL Programming Part I

Duration: 5 Days

### Audience:

Application Programmers with little or no previous experience in COBOL who require formal training in the basic language features and programming techniques.

### Pre-requisites:

An understanding of computer concepts is assumed.

A working knowledge of TSO/ISPF is required. This can be gained from our z/OS TSO/ISPF Workshop.

## Course Objectives

Each delegate will acquire a working knowledge of COBOL and will gain a solid foundation in the fundamentals of COBOL coding including program structure, design, execution and debugging. The concepts of structured programming are introduced with examples and explanation. Good programming practice is encouraged throughout. The course starts with the basics and furthers learning with 28 hands on assignments until delegates are capable of complex programming logic and design.

## Course Content

## Module 1: Documentation & Ancillary information

The COBOL manuals. The manuals relating to both CICS/TS and SQL. Some useful z/OS environmental manuals. Where COBOL executes and a brief history

## Module 2: Syntax & Structure

A short sample program Coding rules Introduction to the four main Divisions An overview of the ACCEPT, DISPLAY and MOVE instructions Introduction to arithmetic instructions An explanation of decision making How to terminate a program, EXIT PROGRAM, GOBACK and STOP.



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# Module 3: Compiling and Debugging

Where is COBOL held, both source and executable. Compilation process for vanilla COBOL programs Compilation implications for CICS/TS and DB2/SQL programs Common Link/Bind Control Statements Compilation errors and correct Run-time errors and correction Debugging aids; focusing on the DISPLAY instruction Using LE to obtain a memory dump – CEEDUMP service

## Module 4: Define, Move and Initialize fields

DATA DIVISION, both WORKING-STORAGE and LINKAGE SECTIONS Basic field definition, PICTURE, VALUE and USAGE clauses Group Structures Defining Conditions, 88 levels Overlaying memory – REDEFINES clause PROCEDURE DIVISION elements Defining literals Using figurative constants MOVE instruction, including the CORRESPONDING clause COPY statement, including pseudo-text Overview of DB2/SQL requirements

## Module 5: Sequential Record File Processing

File types BSAM vs QSAM File processing overview File allocation, SELECT statement File definition, FD statement File instructions; Open, Read, Write, Rewrite and Close Using FILE-STATUS to handle error conditions Using Variable Length Records Using VSAM ESDS Clusters Static vs Dynamic SQL



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## Module 6: Structure Programming

Understanding unstructured issues Structure programming terminology PERFORM instruction, simple format PERFORM instruction, iterative format PERFORM instruction, conditional execution format PERFORM instruction, VARYING format CALL Instruction

### Module 7: Decision Making

Condition terminology Relational expression and operators Using figurative constants within relational expressions Condition names, 88 levels IF-THEN-ELSE construct Nested IF instructions EVALUATE-WHEN-OTHER instructions Setting a condition to be TRUE

#### **Module 8: Arithmetic**

COMPUTE instruction ADD instruction, with and without the GIVING clause DIVIDE instruction MULTIPLY instruction, with and without the GIVING clause SUBTRACT instruction, with and without the GIVING clause