

# **Courses Breakdown**

## **Technical Mainframe**

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# CICS/ESA Series

**Total Time: 15 hours**

|   |   |                      |
|---|---|----------------------|
| <b><i>CICS/ESA: Fundamentals</i></b>  | <b>3 hours</b>  | <b><i>CICS01</i></b> |
| <i>CICS/ESA: Fundamentals provides an overview of the use of CICS.</i>  |   |                      |
| <ul style="list-style-type: none"><li>• Overview</li><li>• CICS Capabilities</li><li>• CICS Needs</li></ul>   | <ul style="list-style-type: none"><li>• Transaction Processing</li><li>• CICS-Supplied Transactions</li><li>• CEDA Operations</li></ul> |                      |
| <b><i>CICS/ESA: Programming Basics</i></b>  | <b>2 hours</b>  | <b><i>CICS02</i></b> |
| <i>CICS/ESA: Programming Basics introduces terms and command formats needed to code CICS programs using COBOL as the native language.</i>           |   |                      |
| <ul style="list-style-type: none"><li>• CICS Terms and Commands</li><li>• Components of CICS Commands</li><li>• The Compilation Process</li></ul>   | <ul style="list-style-type: none"><li>• Data Interfaces</li><li>• Data Storage</li><li>• System Information</li></ul>                   |                      |
| <b><i>CICS/ESA: Advanced Programming</i></b>  | <b>2 hours</b>  | <b><i>CICS03</i></b> |
| <i>CICS/ESA: Advanced Programming covers advanced programming for CICS/ESA.</i>   |   |                      |
| <ul style="list-style-type: none"><li>• Communicating with Terminals</li><li>• Terminal Control Commands</li><li>• Exceptional Conditions</li></ul> | <ul style="list-style-type: none"><li>• Handling Specific Conditions</li><li>• Testing Your Application</li><li>• Workshop</li></ul>    |                      |

**CICS/ESA: Defining Maps****2 hours****CICS04**

*CICS/ESA: Defining Maps shows users how to write Assembler language programs to format tables called maps.*

- Understanding BMS
- Course Example and Conventions
- BMS Data Mapping Facility
- Physical and Symbolic Description Maps
- Map Set Components

**CICS/ESA: Generating Maps****3 hours****CICS05**

*CICS/ESA: Generating Maps shows users how to generate maps.*

- The DFHMSD Macro
- Course Example and Conventions
- The DFHMDI Macro
- The DFHMDF Macro
- Defining Field Characteristics
- Extended Attributes
- Programming with Maps

**CICS/ESA: Using Maps****3 hours****CICS06**

*CICS/ESA: Using Maps provides an overview of the use of BMS and how to use it to send, receive and dynamically modify maps.*

- Understanding BMS
- Coding Samples and Exercises
- SEND MAP and RECEIVE MAP
- Other BMS Commands
- Modifying Field Attributes
- Determining Pressed Keys

## CMS Series

**Total Time: 8 hours**

***CMS: CMS for New Users***

**4 hours**

**CMSS01**

*CMS: CMS for New Users introduces IBM's Conversational Monitoring System and basic VM/ESA concepts including virtual machines and the Shared File System.*

- Introduction to VM/CMS
- CMS Timesharing System
- CP, CMS, and XEDIT Environments
- HELP
- Handling CMS Files
- The FILELIST Command
- The Shared File System

***CMS: Advanced CMS Functions***

**3 hours**

**CMSS02**

*CMS: Advanced CMS Functions explains the advanced functions of IBM's Conversational Monitoring System.*

- Introduction to XEDIT
- Scrolling and Saving
- Introduction to EXECs
- Communicating with Other Users
- Notes
- Sending and Receiving Files

# COBOL Series

**Total Time: 24 hours**

|  |                       |  |
|--|-----------------------|--|
| <p><b>COBOL: Basics</b></p> <p><i>COBOL: Basics provides an introduction to COBOL.</i></p> <ul style="list-style-type: none"><li>• Introduction to COBOL</li><li>• COBOL Program Structure</li><li>• Specifications and Instructions</li><li>• COBOL Reference Format</li></ul>  | <p><b>4 hours</b></p> | <p><b>COBS01</b></p>   |
| <p><b>COBOL: Program Structure</b></p> <p><i>COBOL: Program Structure provides an introduction to the program structure of COBOL.</i></p> <ul style="list-style-type: none"><li>• Overview</li><li>• Identification Division</li><li>• Environment Division - Configuration</li></ul>  | <p><b>3 hours</b></p> | <p><b>COBS02</b></p> <ul style="list-style-type: none"><li>• Preliminary Steps</li><li>• Compiling The Program</li><li>• Compiler Output</li><li>• Other Compiler Details</li><li>• Environment Division - Input-Output</li><li>• Data Division</li><li>• Procedure Division</li></ul> |
| <p><b>COBOL: Data Structure</b></p> <p><i>COBOL: Data Structure provides an overview of the use of COBOL and how to use it to understand data hierarchy, rules for coding record entries, data storage, and the working-storage sections of a COBOL program.</i></p> <ul style="list-style-type: none"><li>• Overview</li><li>• Data Hierarchy</li><li>• Rules for Coding Record Entries</li></ul> | <p><b>3 hours</b></p> | <p><b>COBS03</b></p> <ul style="list-style-type: none"><li>• Data Storage</li><li>• Working-Storage Section</li></ul>  |

**COBOL: Coding the Procedure Division****3 hours****COBS04**

*COBOL: Coding the Procedure Division covers various statements used in the Procedure Division of a COBOL program, where the data processing actually occurs. Users will learn how to open and close files, read and write records, and format and move data.*

- Overview
- One-Time Tasks
- Executing the Processing Paragraph
- Reading and Writing Data
- The MOVE Statement
- Moving Data

**COBOL: Completing the Procedure Division****2 hours****COBS05**

*COBOL: Completing the Procedure Division provides information about additional statements that can be used in the Procedure Division of a COBOL program. This course explains how to use conditional statements, arithmetic operations, and record counters in COBOL.*

- Overview
- IF Statements
- Types of Comparisons
- Arithmetic Operations
- Additional Specifications

**COBOL: Numerics****2 hours****COBS06**

*COBOL: Numerics provides an overview of COBOL arithmetic and how to use it to work with decimals and signed numbers.*

- Arithmetic Review
- PICTURE Clause and VALUE Clause
- Moving Numeric Data
- Coding Options

**COBOL: Coding Arithmetic Statements****3 hours****COBS07**

*COBOL: Coding Arithmetic Statements explains how users perform arithmetic operations in COBOL using the ADD, SUBTRACT, MULTIPLY, DIVIDE and COMPUTE statements.*

- ADD
- SUBTRACT, MULTIPLY, and DIVIDE
- The COMPUTE Statement
- Storage Areas
- Creating Accurate and Efficient Code
- Special Considerations

# COBOL (New) Series

**Total Time: 11 hours**

## **COBOL (New): CICS and the New COBOL**

**3 hours**

**COBN01**

*COBOL (New): CICS and the New COBOL presents programming concepts terminology and specific coding requirements essential to OS/VS COBOL users who must migrate their CICS programs to COBOL.*

- Overview
- ADDRESS OF
- LENGTH OF
- Data Areas
- Migrating CICS Programs
- Other Considerations

## **COBOL (New): Migration to the New COBOL**

**3 hours**

**COBN02**

*COBOL (New): Migration to the New COBOL presents general programming concepts, terminology, and specific coding requirements essential for migrating OS/VS COBOL programs to the ANSI 85 COBOL standard.*

- COBOL Options
- New Improvements
- Basic Extensions
- I/O Scope Terminators
- Logical Structures
- Case Structures

## **COBOL (New): Functions in the New COBOL**

**2 hours**

**COBN03**

*COBOL (New): Functions in the New COBOL provides an overview of changes and additions that have been implemented with the ANSI 85 COBOL standard.*

- Initializing Data
- Language Changes and Enhancements
- Language Incompatibilities
- Numeric Calculations
- Alphanumeric Arguments

## **COBOL (New): Compiling and Debugging**

**3 hours**

**COBN04**

*COBOL (New): Compiling and Debugging shows users how to use the new COBOL to compile code and debug.*

- Combining Programs
- Program Linkage
- Using Compilers
- New Compiler Options
- Using Your Source Code for Debugging
- The Debugging Process

# COBOL (OS/VS) Series

**Total Time: 19 hours**

|  |   |               |
|--|---|---------------|
| <b>COBOL (OS/VS): Fundamentals</b>   | <b>2 hours</b>  | <b>COB001</b> |
| <i>COBOL (OS/VS): Fundamentals provides an introduction to COBOL (OS/VS) concepts, including a general description of COBOL and its evolution, program structure, specifications, instructions and other programming considerations, and preliminary coding steps.</i> |   |               |
| <ul style="list-style-type: none"><li>• Introduction</li><li>• COBOL Program Structure</li><li>• Specifications and Instructions</li></ul>   | <ul style="list-style-type: none"><li>• Preliminary Coding Steps</li><li>• Other Programming Considerations</li></ul> |               |

|   |  |               |
|---|--|---------------|
| <b>COBOL (OS/VS): Program Structure</b>   | <b>2 hours</b>   | <b>COB002</b> |
| <i>COBOL (OS/VS): Program Structure provides an introduction to COBOL (OS/VS) program structure. Users will learn how to code Identification Division, the Configuration and Input-Output sections of Environment Design, as well as SELECT statements.</i> |  |               |
| <ul style="list-style-type: none"><li>• Identification Division</li><li>• Environment Division - Configuration</li></ul>  | <ul style="list-style-type: none"><li>• Environment Division - Input-Output</li><li>• SELECT Statement Clauses</li></ul> |               |

|  |  |               |
|--|--|---------------|
| <b>COBOL (OS/VS): Data Division</b>  | <b>3 hours</b>   | <b>COB003</b> |
| <i>COBOL (OS/VS): Data Division describes the third division of a COBOL program and covers specific coding requirements.</i>             |  |               |
| <ul style="list-style-type: none"><li>• Coding the Data Division</li><li>• File Section</li><li>• Using Program Specifications</li></ul> | <ul style="list-style-type: none"><li>• Elementary Items</li><li>• Working-Storage Section</li></ul> |               |

**COBOL (OS/VS): Procedure Division****4 hours****COB004**

*COBOL (OS/VS): Procedure Division provides an overview of the use of COBOL (OS/VS) and how to use it to do procedure division.*

- Function and Contents
- The Initial Paragraph
- The Processing Paragraph
- Additional Statements
- Applying the MOVE Statement
- Conditional Statements
- The IF Sentence

**COBOL (OS/VS): Completing Your Program****3 hours****COB005**

*COBOL (OS/VS): Completing Your Program is designed to introduce general programming concepts and specific coding requirements for the COBOL programming language.*

- Reading Paragraph
- Writing Paragraph
- Counting Records
- Printing
- Compiling the Program
- Final Considerations

**COBOL (OS/VS): Numerics****2 hours****COB006**

*COBOL (OS/VS): Numerics explains the four basic arithmetic operations and additional clauses and statements that deal with COBOL arithmetic. Users will learn how to correctly define, store, and perform calculations using numeric items, including decimal and signed numbers.*

- Basic Operations
- Decimal Numbers
- Signed Numbers
- Coding Options

**COBOL (OS/VS): Arithmetic Statements****3 hours****COB007**

*COBOL (OS/VS): Arithmetic Statements provides information on COBOL (OS/VS) arithmetic statements. Users will learn how to code effective and efficient arithmetic statements.*

- The ADD Statement
- SUBTRACT, MULTIPLY, and DIVIDE
- The COMPUTE Statement
- Storage Areas
- Creating Accurate and Efficient Code
- Special Considerations

## DB2 Series

**Total Time: 8 hours**

### ***DB2: The Programming Environment***

**2 hours**

**DB2S01**

*DB2: The Programming Environment introduces the programming considerations related to embedding SQL statements in a COBOL program.*

- Overview
- Embedding SQL in a Program
- Host Variable Coding Requirements
- Responding to DB2 Messages
- Stored Procedures

### ***DB2: Row and Table Manipulation***

**3 hours**

**DB2S02**

*DB2: Row and Table Manipulation provides an overview of the use of DB2 and how to use it to change and manipulate data in DB2 rows and tables to affect the outcome of COBOL programs.*

- Selecting a Single Row
- Referencing Data
- Selecting Multiple Rows
- Fetching Rows
- Direct Table Updates
- Indirect Table Updates
- Updating Column Values

### ***DB2: Program Development and Efficiency***

**3 hours**

**DB2S03**

*DB2: Program Development and Efficiency provides an overview of the interactive tools available for program development methods to prevent failures and invalid updates.*

- Program Preparation And Support
- DCLGEN
- Converting Your Source Program
- Data Integrity
- Concurrency
- Improving Program Efficiency

# EASYTRIEVE Series

**Total Time: 4 hours**

|   |   |                      |
|---|---|----------------------|
| <b><i>EASYTRIEVE: Using EASYTRIEVE PLUS</i></b>   | <b>2 hours</b>  | <b><i>EAST01</i></b> |
| <i>EASYTRIEVE: Using EASYTRIEVE PLUS provides an introduction to using EASYTRIEVE PLUS.</i>   |   |                      |
| <ul style="list-style-type: none"><li>• Rules of EASYTRIEVE PLUS</li><li>• EASYTRIEVE PLUS Programs</li><li>• The Library Section</li></ul> | <ul style="list-style-type: none"><li>• The JOB Activity Section</li><li>• The Report Section</li></ul> |                      |

|  |  |                      |
|--|--|----------------------|
| <b><i>EASYTRIEVE: Enhancing the Program</i></b>  | <b>2 hours</b>   | <b><i>EAST02</i></b> |
| <i>EASYTRIEVE: Enhancing the Program shows users how to use EASYTRIEVE to enhance programs.</i>    |  |                      |
| <ul style="list-style-type: none"><li>• Customizing a Report</li><li>• Report Procedures</li></ul> | <ul style="list-style-type: none"><li>• Perfecting Your Program</li><li>• Additional Processing Statements</li></ul> |                      |

# ISPF Series

**Total Time: 11 hours**

|   |                       |                             |
|---|-----------------------|-----------------------------|
| <p><b><i>ISPF: User Interface</i></b></p> <p><i>ISPF: User Interface provides an introduction to ISPF.</i></p> <ul style="list-style-type: none"><li>• CUA Design Concepts</li><li>• ISPF Container Objects</li><li>• Navigation</li></ul>  | <p><b>3 hours</b></p> | <p><b><i>ISPF01</i></b></p> |
| <p><b><i>ISPF: Basic Program Development</i></b></p> <p><i>ISPF: Basic Program Development provides an introduction to ISPF basic program development.</i></p> <ul style="list-style-type: none"><li>• Organizing Data Sets</li><li>• Searching Data Sets</li><li>• Editing Data Sets</li><li>• Line Commands</li></ul>                 | <p><b>4 hours</b></p> | <p><b><i>ISPF02</i></b></p> |
| <p><b><i>ISPF: Advanced Program Development</i></b></p> <p><i>ISPF: Advanced Program Development provides an overview of advanced features and uses of ISPF.</i></p> <ul style="list-style-type: none"><li>• CANCEL and SAVE Commands</li><li>• VIEW and BROWSE Commands</li><li>• ISPF Edit Features</li><li>• Line Commands</li></ul> | <p><b>4 hours</b></p> | <p><b><i>ISPF03</i></b></p> |

# JCL Series

**Total Time: 25 hours**

## ***JCL: Fundamentals of Jobstreams***

**3 hours**

**JCLS01**

*JCL: Fundamentals of Jobstreams shows users how to use JCL to code jobstreams for MVS Job Control Language statements.*

- JCL Overview
- JCL Statements and Procedures
- General Syntax Rules
- Building Jobstreams
- Adding Jobstream Details
- Additional Statement Parameters

## ***JCL: Data Sets, Procedures, and Output***

**3 hours**

**JCLS02**

*JCL: Data Sets, Procedures, and Output shows users how to use JCL to code data sets, procedures and other data found in common MVS Job Control Language statements.*

- Accessing Data Sets
- Defining Data Sets in Your Jobstreams
- Creating a New Data Set Under SMS
- Procedures
- Looking at Your Output
- Scanning Your Output

## ***JCL: Specifying Job Information***

**3 hours**

**JCLS03**

*JCL: Specifying Job Information provides an overview of parameters and options coded on JOB EXEC JES2 and JES3 statements that deal with how a job is processed through the operating system.*

- Jobnames and Stepnames
- More JOB Parameters
- Job Identification Options
- Job Resources and Performance
- Controlling the Address Space
- Resource And Performance Control Options

## ***JCL: Controlling the Job Process***

**2 hours**

**JCLS04**

*JCL: Controlling the Job Process covers parameters and options coded on JOB, EXEC, JES2 and JES3 statements that deal with how a job is processed through the operating system.*

- Conditional Job Processing
- COND Parameter
- Additional Job Control Information
- Controlling Restarts
- Job Communication Options

**JCL: Types of Data Sets****3 hours****JCLS05**

*JCL: Types of Data Sets covers principles and practices of coding data set information.*

- Data Set Overview
- Using Permanent Data Sets
- Disposition of Data Sets
- Cataloging Data Sets
- Accessing Catalogued Data Sets
- Using Temporary Data Sets
- Passing Data Sets

**JCL: Working with Data Sets****3 hours****JCLS06**

*JCL: Working with Data Sets provides an over view of data set information, including defining and working with generation data sets and storing data.*

- Concatenating Data Sets
- Defining Generation Data Sets
- Creating Generation Data Sets
- Using Generation Data Sets
- Space Allocation
- Considerations for Tapes
- Mounting Tapes

**JCL: Instream and Catalogued Procedures****2 hours****JCLS07**

*JCL: Instream and Catalogued Procedures provides and overview of procedure libraries, instream procedures, and cataloged procedures.*

- Compiling Programs
- Types of JCL Procedures
- PROD, PEND, and EXEC Statements
- Instream Procedure Rules
- Catalogued Procedure Rules

**JCL: Coding and Executing Procedures****3 hours****JCLS08**

*JCL: Coding and Executing Procedures provides an overview of positional, keyword, and symbolic parameters.*

- Execution
- Multi-Step Jobs
- Postponing the DD until Execution
- Symbolic Parameters
- Assigning Execution Values
- Assigning Defaults and No Value
- Concatenating Symbolic Parameters

**JCL: Modifying Procedures****3 hours****JCLS09**

*JCL: Modifying Procedures provides and overview of some overriding parameters of an EXEC statement in a procedure.*

- Overriding Procedures
- Statement Sequencing
- Parameter Substitutions
- Multi-Step DDNames
- Parameter Overrides
- Modifying Other Parameters

# Micro Focus COBOL Workbench 4 Series

**Total Time: 19 hours**

|   |                |               |
|---|----------------|---------------|
| <b>MFC Workbench: Getting Started</b>   | <b>4 hours</b> | <b>MF4TC1</b> |
| <i>Micro Focus COBOL Workbench 4.0: Getting Started presents the concepts necessary to understanding the role of the Workbench in the development process.</i>  |                |               |
| <ul style="list-style-type: none"><li>• What is Micro Focus COBOL Workbench?</li><li>• The Workbench Desktop</li><li>• The Advanced Organizer Components</li></ul>  |                |               |
| <b>MFC Workbench: Managing Files</b>  | <b>5 hours</b> | <b>MF4TC2</b> |
| <i>Micro Focus COBOL Workbench 4.0: Managing Files presents the tools used to manage files in Micro Focus COBOL Workbench. These tools include GUI File Transfer, File Converter, and Data File Editor.</i> |                |               |
| <ul style="list-style-type: none"><li>• Establishing Files on the Workbench</li><li>• Manipulating Files on the Workbench</li></ul>   |                |               |
| <b>MFC Workbench: Developing Programs</b>   | <b>4 hours</b> | <b>MF4TC3</b> |
| <i>Micro Focus COBOL Workbench 4.0: Developing Programs demonstrates how to use the Animator V2 tool to develop and maintain COBOL programs.</i>  |                |               |
| <ul style="list-style-type: none"><li>• Animator V2 Editing Basics</li><li>• Syntax Checking and Query Operations</li></ul>   |                |               |
| <b>MFC Workbench: Testing Programs</b>  | <b>3 hours</b> | <b>MF4TC4</b> |
| <i>Micro Focus COBOL Workbench 4.0: Testing Programs demonstrates how to test COBOL programs quickly and efficiently using the Animator V2 tool.</i>  |                |               |
| <ul style="list-style-type: none"><li>• Animator V2 Basics</li><li>• Using Breakpoints</li></ul>  |                |               |
| <b>MFC Workbench: Compiling and Testing</b>   | <b>3 hours</b> | <b>MF4TC5</b> |
| <i>Micro Focus COBOL Workbench 4.0: Compiling and Complex Testing demonstrates the use of tools to compile and test COBOL programs in Micro Focus COBOL Workbench.</i>                                      |                |               |
| <ul style="list-style-type: none"><li>• Compiling</li><li>• Complex Testing Tools</li></ul>   |                |               |

# MVS Series

**Total Time: 12 hours**

|   |                |               |
|---|----------------|---------------|
| <b>MVS: Fundamentals of MVS and JES</b>   | <b>3 hours</b> | <b>MVSS01</b> |
| <i>MVS: Fundamentals of MVS and JES provides an introduction to MVS.</i>  |                |               |
| <ul style="list-style-type: none"><li>• MVS Overview</li><li>• Basic Hardware Components</li><li>• MVS Functional Areas</li><li>• The JES2 Job Entry Subsystem</li><li>• The JES3 Job Entry Subsystem</li></ul>                     |                |               |
| <b>MVS: Enhancing Performance</b>   | <b>2 hours</b> | <b>MVSS02</b> |
| <i>MVS: Enhancing Performance describes many IBM tools and facilities available for use with the MVS operating system.</i>  |                |               |
| <ul style="list-style-type: none"><li>• MVS Functional Areas</li><li>• Enhanced Data Management Capabilities</li><li>• MVS Subsystems</li></ul>   |                |               |
| <b>MVS: Utilities</b>   | <b>3 hours</b> | <b>MVSS03</b> |
| <i>MVS: Utilities provides and introduction to the IDCAMS utility and its control statements.</i>   |                |               |
| <ul style="list-style-type: none"><li>• The IDCAMS Utility</li><li>• IDCAMS and Data Sets</li><li>• General Purpose Utilities</li><li>• The IEBCOPY Utility</li><li>• The IEBPTPCH Utility</li><li>• The IEBUPDTE Utility</li></ul> |                |               |
| <b>MVS: Basic Operations</b>  | <b>2 hours</b> | <b>MVSS04</b> |
| <i>MVS: Basic Operations provides an introduction to the fundamentals of MVS.</i>   |                |               |
| <ul style="list-style-type: none"><li>• Types of Consoles</li><li>• System Messages</li><li>• Console Display</li><li>• The DISPLAY Command</li><li>• Job Failures and ABENDs</li></ul>   |                |               |
| <b>MVS: Advanced Operations</b>   | <b>2 hours</b> | <b>MVSS05</b> |
| <i>MVS: Advanced Operations provides an overview of MVS advanced operations.</i>  |                |               |
| <ul style="list-style-type: none"><li>• START and MODIFY Commands</li><li>• Job and Task Management</li><li>• DM, VARY, and DU Commands</li><li>• Device Management Problems</li><li>• PF Key Assignments</li></ul>                 |                |               |

# QMF Series

**Total Time: 8 hours**

|   |                       |                      |
|---|-----------------------|----------------------|
| <p><b>QMF: Fundamentals of QMF</b></p> <p><i>QMF: Fundamentals of QMF describes how to use IBM's Query Management Facility (QMF) to retrieve information from relational databases.</i></p> <ul style="list-style-type: none"><li>• QMF Overview</li><li>• QMF Concepts</li></ul>   | <p><b>2 hours</b></p> | <p><b>QMFS01</b></p> |
| <p><b>QMF: Prompted Query and QBE</b></p> <p><i>QMF: Prompted Query and QBE provides an introduction to IBM's Query Management Facility (QMF).</i></p> <ul style="list-style-type: none"><li>• QMF Overview</li><li>• Columns</li><li>• Row Conditions</li></ul>  | <p><b>2 hours</b></p> | <p><b>QMFS02</b></p> |
| <p><b>QMF: Reports</b></p> <p><i>QMF: Reports describes how to use IBM's Query management Facility (QMF) to format reports generated from queries that retrieve information from relational databases.</i></p> <ul style="list-style-type: none"><li>• QMF Overview</li><li>• QMF Concepts</li><li>• Formatting Reports</li></ul> | <p><b>2 hours</b></p> | <p><b>QMFS03</b></p> |
| <p><b>QMF: Additional Formatting Techniques</b></p> <p><i>QMF: Additional Formatting Techniques describes additional methods to format reports using IBM's Query Management Facility (QMF).</i></p> <ul style="list-style-type: none"><li>• QMF Overview</li><li>• USAGE Codes</li><li>• Control Breaks and Percentages</li></ul> | <p><b>2 hours</b></p> | <p><b>QMFS04</b></p> |

# REXX Programming Series

**Total Time: 5 hours**

## **REXX Programming: Introducing REXX**

**2 hours**

**REXS01**

*REXX Programming: Introducing REXX provides an introduction to REXX programming.*

- REXX Features
- Variables, Expressions and Operators
- Other REXX Operators
- SAY and PULL Instructions
- The IF/THEN/ELSE Instruction
- Looping Instructions

## **REXX Programming: Advanced Program Features**

**3 hours**

**REXS02**

*REXX Programming: Advanced Program Features provides an advanced look at programming REXX features.*

- Conditional Instructions
- Subroutines and Interrupt Instructions
- REXX Functions
- Compound Variables
- Additional Program Features

# SQL Series

**Total Time: 11 hours**

## **SQL: Database Maintenance**

**2 hours**

**SQLS01**

*SQL: Database Maintenance shows users how to create and maintain tables in SQL. Users will learn basic concepts and terms related to database and table design, and will become familiar with the various SQL statements used to format tables and manipulate table data.*

- SQL Overview
- Designing Tables
- Creating Tables
- Inserting Rows
- Updating and Deleting Rows

## **SQL: Database Objects**

**2 hours**

**SQLS02**

*SQL: Database Objects shows users how to create, change, and delete database objects including table views, table spaces, storage groups, indexes, index spaces, and databases. Users will also learn how to use the SQL system catalog.*

- SQL Overview
- Table Views
- Objects for Storing Tables
- Modifying Databases and Storage Groups
- Modifying Table Spaces
- Maintaining Other Database Objects

## **SQL: Query Techniques**

**3 hours**

**SQLS03**

*SQL: Query Techniques provides an introduction to basic query techniques used in SQL.*

- SQL Overview
- Selecting Columns
- Selecting and Sorting Rows
- SQL Built-In Functions
- Combining Table Information
- Date And Time Columns
- Date And Time Data in Queries

## **SQL: Joining Tables**

**4 hours**

**SQLS04**

*SQL: Joining Tables provides an overview of the use of SQL and how to use it to join tables.*

- SQL Overview
- Combining Information From Two Tables
- Inner Joins
- Outer Joins
- Merging Tables
- Subselects
- Basic Subqueries

## TSO/E Series

**Total Time: 5 hours**

### ***TSO/E: CLISTS***

**3 hours**

***TSOC01***

*TSO/E: CLISTS presents general concepts and specific techniques for designing, writing and testing CLISTS.*

- CLIST Overview
- Creating a CLIST
- Datasets
- WRITE and READ
- CLIST Variables
- Controlling the Processing Flow
- Testing Your CLIST

### ***TSO/E: Advanced Features***

**2 hours**

***TSOC02***

*TSO/E: Advanced Features provides an overview on how to use the control variables and built-in functions of CLISTS.*

- Control Variables and Built-In Functions
- TSO EDIT
- Processing Files
- Modularizing
- Error Routines

# VSAM Series

**Total Time: 5 hours**

|   |  |               |
|---|--|---------------|
| <b>VSAM: Fundamentals</b>   | <b>2 hours</b>   | <b>VSAM01</b> |
| <i>VSAM: Fundamentals provides an overview of the internal structure and the processing of VSAM data sets.</i>                      |  |               |
| <ul style="list-style-type: none"><li>• Introduction to VSAM</li><li>• VSAM Terminology</li><li>• VSAM Data Set Structure</li></ul> | <ul style="list-style-type: none"><li>• Data CI Internal Structure</li><li>• KSDS Internal Structure</li></ul> |               |

|   |  |               |
|---|--|---------------|
| <b>VSAM: Advanced Features</b>  | <b>3 hours</b>   | <b>VSAM02</b> |
| <i>VSAM: Advanced Features provides an overview of the advanced features of VSAM data sets.</i>   |  |               |
| <ul style="list-style-type: none"><li>• KSDS Updates</li><li>• Updates With CI/CA Splits</li><li>• KSDS Insertion Techniques</li><li>• Other VSAM Data Sets</li></ul> | <ul style="list-style-type: none"><li>• VSAM Alternate Indexes</li><li>• Processing and Accessing an Index</li><li>• Key Compression</li><li>• Index Record Format</li></ul> |               |

# XEDIT Series

**Total Time: 5 hours**

|   |                |                      |
|---|----------------|----------------------|
| <b><i>XEDIT: XEDIT for New Users</i></b>  | <b>3 hours</b> | <b><i>XEDS01</i></b> |
| <i>XEDIT: XEDIT for New Users provides an introduction to using XEDIT to edit CMS files. Users will learn how to navigate the XEDIT screen, how to open and save files, and how to use commands and function keys to enter, locate, and manipulate data in files.</i> |                |                      |
| <ul style="list-style-type: none"><li>• XEDIT Basics</li><li>• The XEDIT Screen</li><li>• Creating a File</li><li>• Moving Through a File</li><li>• Searching a File</li><li>• Changing a File</li><li>• Additional Commands</li></ul>                                |                |                      |

|  |                |                      |
|--|----------------|----------------------|
| <b><i>XEDIT: Advanced XEDIT Functions</i></b>  | <b>2 hours</b> | <b><i>XEDS02</i></b> |
| <i>XEDIT: Advanced XEDIT Functions provides an introduction to XEDIT and the functions of XEDIT.</i>   |                |                      |
| <ul style="list-style-type: none"><li>• Changing Characters</li><li>• Protecting Files</li><li>• Advanced Editing Features</li><li>• More About Editing</li><li>• Changing the Standard XEDIT Screen</li></ul> |                |                      |