

ASSEMBLER PROGRAMMING

COURSE CURRICULUM | COURSE CODE C010

23

MODULES

30 hrs

TOTAL INSTRUCTION

EVILT

DELIVERY METHOD

None

PREREQUISITES

ASSEMBLER PROGRAMMING CURRICULUM

MODULES 1 – 6

MODULE

1

Language Overview

- Language Hierarchy
- Assembler Program Components
- Program Components

MODULE

2

Machine Concepts

- Byte, Nibble, Words
- Central Processing Unit (CPU) – PSW, Condition codes
- Instruction Address – Registers, Base Registers, Volatile Registers

MODULE

3

S/390 Addressing and Instructions

- Addressing
- Machine Instruction Formats
- Assembler Language Formats

MODULE

4

The Program Development Process

- Assembler Language Syntax
- The Assembly Process

MODULE

5

Data Representation

- Binary, Packed decimal
- Instructions ALC Basics – ALC coding rules, statements, comments, common instructions
- Assembler Instructions – TITLE, EJECT, SPACE, COPY, END

MODULE

6

Defining Data

- The Define Storage (DS) Instruction
- The Define Constant (DC) Instruction
- Literals
- DS Instruction, Duplication factor
- DC instruction
- Machine Instructions – MVC, CLC, B

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MODULES 7 – 14

MODULE 7	Basic MVS I/O Facilities (Intermediate Level)	- Defining Data Sets - Data Transfer
MODULE 8	Macros	- MACRO Instructions – OPEN, GET, PUT, CLOSE, DCB - ALC Program Organization
MODULE 9	Data Manipulation Instructions	- Load and Store Instructions - Move Instructions
MODULE 10	Comparing and Branching	- Decision Making in Assembler - Compare Instructions - Branching - Building Structured Constructs
MODULE 11	Fixed-Point Binary Arithmetic	- Decimal to Binary Conversion - Addition and Subtraction - Multiplication - Division
MODULE 12	Looping (Advanced Level)	- The Iterative Loop - Address Arithmetic - Processing Arrays
MODULE 13	Condition Structures & Decimal Instructions	- EQU (Equate), MVI (Move Immediate), CLI (Compare Logical Immediate), CP (Compare Decimal), BC (Branch on condition) Decimal Instructions - AP Instruction, SP, ZAP (Zero and Add), PACK, UNPK, OI, MP, DP, SRP
MODULE 14	Subprogram Linkage	- The calling program - Statics Versus Dynamic Calls - Static Calls - Dynamic Calls - Address Constants (ADCONS) - Pointing to the Parm list - Checking the Return code

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MODULES 15 – 23

MODULE 15	LTR Instruction & Dynamic Calls	- LTR instruction (Load and Test Register), CH - Dynamic Calls using LOAD, BALR
MODULE 16	Logical and Shift Instructions	- Boolean Operations - Shifting Instructions - Testing Bit Values
MODULE 17	Subroutines	BAL, ST, L, BR, AP, SP
MODULE 18	Linkage, Parameters and Registers	- Multiple Base Registers - TR, TRT, BXLE, EX, IC
MODULE 19	External Subroutines	- Linkage conventions - DSECT – External Versus Internal subroutines - Directives
MODULE 20	Declarative Macro	DCB OPEN, CLOSE, READ, WRITE
MODULE 21	Testing and Debugging	- Finding Assembly Errors - Finding Execution Errors - VSAM MACROS – KSDS, ESDS
MODULE 22	Advanced Topics	Integrating with COBOL, CICS, DB2, VSAM
MODULE 23	Debugging & Dump Reading	Assembler Debugging and dump reading

COURSE DETAILS

Course Overview

- Learn all the required fundamentals of Assembler Programming language
- Learn how to debug Assembler Programs
- Learn how to integrate with COBOL, CICS, DB2, VSAM
- Learn how to read the dump

Course Activities

- Expert Trainers with real time experience
- More hands on Practice sessions with emphasize on debugging and error fixing
- Real time scenarios to cover Abend handling

Target Audience

1. Mainframe Development Professionals in Assembler Modules
2. Modernization professionals using Assembler Module
3. System Programmers
4. Any Mainframe Developer who wishes to learn Advanced Programming

Delivery Method

Ez-Learn Virtual Instructor Led Training (EVILT)

Course Duration

30 hrs

Prerequisites

None

Recommended Training

Batch of People (Online)

Learning Path

<https://www.ez-learn.global/assembler-programming/>