

**Duration:** 5 days

**Course Number:** ISI-ASM-02

## Description

This course introduces students to the intermediate techniques available when using the IBM High Level Assembler (HLASM). Upon completion of the course, the students will be able to:

- Utilize Boolean logic and logical operations.
- Use advanced data manipulation instructions.
- Transfer control to other programs via CALL and LOAD macros.
- Acquire and use additional memory via GETMAIN services and DSECTs.
- Read and write VSAM key-sequenced datasets.
- Code, assemble and linkedit assembler programs utilizing 31-bit addressing.
- Code, assemble and linkedit reentrant and reusable programs.
- Use system provided macros, and write their own macros.

A series of written and lab exercises will be used to reinforce the classroom education.

## Audience

Application and systems programmers that have a need to use more advanced language facilities when using the IBM High Level Assembler.

## Prerequisites

- **Introduction to z/OS**, or equivalent experience.
- **TSO/ISPF**, or equivalent experience.
- **Basic MVS JCL**, or equivalent experience.
- **Basic Assembler Programming**, or equivalent experience.

## Course Agenda

### Logical Instructions

- AND / OR / XOR
- TM / BO / BNO
- IC / STC

### Advanced Data Manipulation Instructions

- ICM / STCM / CLM
- MVO
- MVCL / CLCL
- EX

### System Macros

- GETMAIN / FREEMAIN
- TIME
- ABEND
- SNAP
- WTO / WTOR / DOM

### Using VSAM Datasets

- Overview
- ACB / RPL Macro
- OPEN / CLOSE Macro
- GET Macro
- POINT Macro
- SHOWCB Macro
- PUT Macro
- ERASE Macro

### Internal Subroutines

- BAL / BALR Instructions
- Parameter List Formats

## Course Agenda

### External Subroutines

- Linkage Requirements
- Parameter List Structure
- CALL Macro
- Linkage Editor Requirements
- LOAD Macro

### 31-bit Addressing

- Overview
- Coding Requirements
- Linkage Editor Requirements

### Reentrant/Reusable Programs

- Overview
- Coding Requirements
- Linkage Editor Requirements

### Writing User Macros

- Types of Macros
- Macro Structure
- Macro Variables
- System Macro Variables
- Conditional Assembly Statements
- Assembler Attributes