

## Assembler Language – Introduction

### Course Summary

#### Description

This class is an introduction to Assembler Language programming. Topics include an overview of computer architecture, review of instruction formats, and basic assembler language instructions

#### Topics

- Introduction to computer systems architecture
- Basic Instructions
- LOAD/STORE instructions
- Assembler Language Program Structure
- Conditional Instructions
- Basic I/O Operations
- Introduction to macros
- Mathematical Operations
- Arithmetic operations using decimal instructions

#### Audience

This class is intended for programmers or operators who have a good understanding of basic OS/390 architecture.

#### Prerequisites

Students should have experience with TSO/ISPF and JCL.

#### Duration

Five days

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### **Course Outline**

- I. Introduction to Computer Systems Architecture**
  - A. Review how data is represented in storage
  - B. Introduce addressing concepts; absolute and relative
  - C. Examine the use of registers and how they are used in instructions
  - D. Introduce the Program Status Word (PSW).
  
- II. Basic Instructions**
  
- III. LOAD/STORE Instructions**
  - A. MOVE instructions
  - B. Data definitions
  
- IV. Assembler Language Program Structure**
  - A. Introduction to save/restore register conventions
  - B. Overview of general register usage
  - C. Establishing program addressability.
  
- V. Conditional Instructions**
  - A. COMPARE instructions.
  - B. BRANCH instructions
  
- VI. Basic I/O Operations**
  
- VII. Introduction to Macros**
  - A. OPEN/CLOSE processing of sequential files
  - B. GET/PUT using QSAM
  
- VIII. Mathematical Operations**
  
- IX. Arithmetic Operations Using Decimal Instructions**
  - A. Performing binary arithmetic operations