

# PL/I Introductory Programming

---

<b>Duration</b>	5 days.
<b>Participants</b>	Experienced programmers with a knowledge of at least one high level language, such as COBOL or C. Entry level programmers can also attend but this course does not teach programming logic or concepts.
<b>Objectives</b>	Upon successful completion of this course, you will be able to <ul style="list-style-type: none"><li>• Compile, test, and modify PL/ I programs.</li><li>• Understand PL/ I data formats and organization.</li><li>• Appreciate the flexibility of operational expressions and builtin functions.</li><li>• Use the control statements to create structured PL/ I programs.</li><li>• Perform I/ O operations using Record I/ O and basic Stream I/ O.</li><li>• Modularize program tasks as subroutines.</li></ul>
<b>Description</b>	This course introduces the programmer to the basic features of PL/ I. The lecture material covers both concepts and syntax for each topic with consideration for its practical application
<b>Format</b>	Lecture with class exercises and workstation exercises.
<b>Prerequisites</b>	Knowledge of the Operating System; TSO or CMS; and on-line source editor.
<b>Topic Outline</b>	<b>Program Components</b> <ul style="list-style-type: none"><li>Character Set</li><li>Identifiers</li><li>Statement Types</li><li>Comments</li><li>Beginning and Ending a Program</li></ul> <b>The DECLARE Statement</b> <ul style="list-style-type: none"><li>Syntax and format</li><li>INITIAL attribute</li><li>Default rules</li></ul> <b>Scalar Identifiers</b> <ul style="list-style-type: none"><li>Use of constants</li><li>Numeric and string data<ul style="list-style-type: none"><li>Fixed point decimal and binary</li><li>Character and bit string</li><li>Pictures</li></ul></li><li>Assignment statement rules</li></ul>

## **PL/I Introductory Programming (continued)**

---

### **Topic Outline**

#### **Structures**

- Components and syntax
- Accessing structure data
- Relative level
- Qualification of names
- The LIKE attribute
- Assignment by position and by name

#### **Arrays**

- Dimension attribute
- Accessing arrays and array elements
- Array subscript format
- Assignment rules

#### **Arrays of Structures**

- Concept and syntax
- Accessing one or more elements

#### **Expression Evaluation**

- Arithmetic Operations
- Concatenation
- Comparison
- Logical Operations
- Priority of Operations

#### **Workshop Problem #1**

#### **Control Statements**

- GOTO
- IF/ THEN/ ELSE
  - Syntax and flow of control
  - Nested IF statements
  - Logical unit syntax
- SELECT/ WHEN/ OTHERWISE
  - Syntax and formats
  - Flow of control
- DO Statement
  - Non-iterative
  - TO/ BY
  - WHILE
  - UNTIL
  - END statement
  - Handling array elements
  - Table searching
- LEAVE Statement
- CALL Statement
  - PROCEDURE syntax
  - Flow of control

## **PL/I Introductory Programming (continued)**

---

### **Topic Outline**

#### **File Processing**

- File attributes
- OPEN and CLOSE statements
- PUT DATA and PUT LIST
- Record I/ O
  - Transmission Statements
  - Move Mode
- Interrupts for I/ O Operations
- Structured Programming File Input
- Producing reports using the WRITE statement

#### **Workshop Problem #2**

#### **Builtin Functions and Pseudovariabes**

- Concept and syntax
- BUILTIN attribute
- Where and how used
- Examples of :
  - SUBSTR, STRING, INDEX, VERIFY, DATE,
  - TIME, LENGTH, ADDR, SUM, ROUND

#### **Workshop Problem #3**

#### **Compiler Options**