

## **IMS01 IMS/DB (DL/1) For Application Developers**

**Course Description** This course provides students with the knowledge required to design, develop and maintain IMS/DB applications written in either PL/1, COBOL or Assembler. The schedule incorporates practical sessions, giving students first hand experience in developing IMS/DB applications. The course also gives an overview of some more advanced IMS/DB features, and an appreciation of some DataBase Administrator considerations.

**Who Should Attend** Students should be programmers, analyst/programmers or application developers intending to design, develop or maintain IMS/DB (DL/1) applications in either PL/1, COBOL or Assembler.

**Pre-Requisites** No previous IMS knowledge is required, but students should be already familiar with the host programming language and the TSO/ISPF development environment.

**Duration** 3 Days

### **The Information Management System**

Overview of IMS/ESA  
Hierarchical Database vs. Flat Files  
IMS/DB Objectives & Benefits

### **Hierarchical Concepts**

Segment Types  
Levels  
Segment Occurrences & Twins  
Fields  
Key / Sequence Fields  
Hierarchical Sequence  
Hierarchical Paths

### **IMS/DB Control Blocks**

DataBase Description  
Program Communication Block  
Program Specification Block  
Application Control Block  
The PCB Mask

### **Segment Search Arguments**

Unqualified SSA's  
Qualified SSA's  
Command Codes  
Boolean Operations

### **DL/1 Calls - Retrieval**

Get Unique (GU)  
Current Position Within Database  
Get Next (GN)  
Setting Parentage  
Get Next Within Parent (GNP)

### **DL/1 Calls - Update**

Insert (ISRT)  
Get Hold (GHxx)  
Replace (REPL)  
Delete (DLET)

### **Application Development Lifecycle**

Control Block Generation  
VSAM Dataset Definition  
Database Load  
Program Entry/Parameters  
A Sample DL/1 Call  
Compilation & Link-Edit  
Executing A DL/1 Application Program  
JCL Requirements

### **DFSDDLTO**

Functional Overview  
JCL Requirements  
Basic Control Statements

### **Full Function Access Methods**

HSAM  
HISAM  
HIDAM  
HDAM

### **Additional Features**

Database Re-Organisation - Concepts  
Secondary Indexes - Concepts  
Logical Relationships – Concepts