

## IM1020 – IMS/TM (Online) Application Programming

<b>Course Synopsis</b>	<b>Duration:</b>	Five (5) days.
	<b>Audience:</b>	This course is intended for a Systems Analyst/Applications Programmer or an Applications Programmer who will be responsible for the development of IMS/TM application programs.
	<b>Prerequisites:</b>	Some experience coding IMS/DB calls and knowledge of COBOL/COBOL II and TSO/ISPF.
	<b>Delivery Method:</b>	Instructor led, Hands-on workshops

<b>Brief Description</b>	<p>This course provides a comprehensive presentation of the major features and functions of an IMS telecommunications system.</p> <p>IMS/TM (Online) programming concepts and coding techniques are explained.</p> <p>Detailed coding examples are provided to reinforce the class materials and hands-on workshop programs.</p>
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<b>Course Objectives What You'll Learn</b>	<p>Upon successful completion of this course, the student will:</p> <ul style="list-style-type: none"> <li>• Master the basic concepts of “online” processing</li> <li>• Understand the IMS/TM environment and learn how application programs are executed within such an environment</li> <li>• Understand the purpose and program structures associated with Non-Conversational and Conversational type programs</li> <li>• Learn the relationship between IMS/TM programs and Screen formats developed using Message Formatting Services (MFS)</li> <li>• Complete numerous in-class workshop programs</li> </ul>
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<b>Topics Covered</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b>I. IMS/TM Concepts</b></p> <ul style="list-style-type: none"> <li>• IMS Online System Flow</li> <li>• IMS Online System Overview                             <ul style="list-style-type: none"> <li>– MPP and BMP Programs</li> <li>– SYSGEN Library</li> <li>– DBD (Database Description) Library</li> <li>– PSB (Program Specification Block) Library</li> <li>– ACB (Application Control Block) Library</li> <li>– MFS (Message Formatting Services) Library</li> <li>– Log File</li> <li>– Processing Regions</li> <li>– Input Message Queues</li> <li>– Output Message Queues</li> </ul> </li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <p><b>II. IMS/TM Application Program Concepts</b></p> <ul style="list-style-type: none"> <li>• IMS/TM Application Program Overview</li> <li>• An Application Program that Requires Only the “Originating” Terminal</li> <li>• An Application Program that Requires the “Originating” Terminal, an Alternate Terminal, and an Alternate Line Printer</li> <li>• An Application Program that Requires the “Originating” Terminal and Performs a Program-to-Program Message Switch</li> </ul> </td> </tr> </table>	<p><b>I. IMS/TM Concepts</b></p> <ul style="list-style-type: none"> <li>• IMS Online System Flow</li> <li>• IMS Online System Overview                             <ul style="list-style-type: none"> <li>– MPP and BMP Programs</li> <li>– SYSGEN Library</li> <li>– DBD (Database Description) Library</li> <li>– PSB (Program Specification Block) Library</li> <li>– ACB (Application Control Block) Library</li> <li>– MFS (Message Formatting Services) Library</li> <li>– Log File</li> <li>– Processing Regions</li> <li>– Input Message Queues</li> <li>– Output Message Queues</li> </ul> </li> </ul>	<p><b>II. IMS/TM Application Program Concepts</b></p> <ul style="list-style-type: none"> <li>• IMS/TM Application Program Overview</li> <li>• An Application Program that Requires Only the “Originating” Terminal</li> <li>• An Application Program that Requires the “Originating” Terminal, an Alternate Terminal, and an Alternate Line Printer</li> <li>• An Application Program that Requires the “Originating” Terminal and Performs a Program-to-Program Message Switch</li> </ul>
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## IM1020 – IMS/TM (Online) Application Programming

Topics  
Covered Continued

### III. IMS Library Considerations

- SYSGEN & DBD Libraries
- PSB Library
- Coding a PSB: Non-modifiable PCB's
- Coding a PSB: Modifiable PCB's
- Coding a PSB: Express=Yes PCB's
- PSBGEN Utility
- ACB Library
- ACBGEN Utility
- MFS Library
- MFS Utility

### IV. Review Of MFS Concepts

- Overview of MFS within an IMS/TM Environment
- Use of Device Input Formats (DIF) and Device Output Formats (DOF)
- Use of Message Input Descriptions (MID)
- Use of Message Output Descriptions (MOD)

### V. IMS/TM Application Program Structure

- Application Program Styles.
- The IMS/TM Processing Cycle
- Coding Requirements
- MFS Coding for MIDs and MODs
- Coding Input and Output Message Descriptions
- Coding PCB Masks
- Program Logic Flow
- Coding: Working Storage
- Coding: Linkage Section and Entry Statement
- Coding: Retrieving Input Messages
- Coding: Initialization Routine
- Sending Output Messages to the Originating Terminal
- Sending Output Messages to Alternates
- Program-to-Program Message Switches

### VI. Non-Conversational Programs

- Non-Conversational Programs
- Screen Flow: Non-Conversational Program
- MFS Considerations for a Non-conversational Program
- Program Flow: Non-Conversational Program
- Coding Example for a Non-conversational Program

### VII. Pseudo-Conversational Programs

- Pseudo-Conversational Programs
- Screen Flow: Pseudo-Conversational Program
- MFS Considerations for the Update Screen
- MFS Considerations for the Detail Screen
- Program Flow: Pseudo-Conversational Program
- Coding Example for a Pseudo-conversational Program
- Coding Example (Procedure Division) for a Pseudo-conversational Program

### VIII. Conversational Programs (Part I)

- Conversational Programs
- Basic Flow of a Conversational Program
- Spa Format

### IX. Conversational Programs (Part II)

- Screen Flow: Conversational Program
- MFS Considerations for the Update Screen
- MFS Considerations for the Detail Screen
- Program Flow: Conversational Program
- Coding Example for a Conversational Program
- Coding Example (Procedure Division) for a Conversational Program

### X. Alternate Terminals/Printers/Programs

- Overview: Non-Modifiable and Modifiable PCB's
- Processing with Non-Modifiable PCB's
- Coding Example: Using Non-modifiable PCB's with an Alternate Terminal
- Processing with Modifiable PCB's
- Coding Example: Using Modifiable PCB's with a Program-to-Program Message Switch
- IMS/TM (Online) Application Programming 4

### XI. Efficient Coding Techniques and the DSCA

- Coding for "Short" Fields
- Coding for "Omitted" Fields
- Spacing-out Entire Fields
- Coding for "Short" Messages
- MFS Considerations: Omitted/Short Messages
- Default System Control Area (DSCA)
- MFS Considerations: DSCA

**IM1020 – IMS/TM (Online) Application Programming****Topics  
Covered Continued*****XII. Dynamic Attribute Modification***

- MFS Concepts
- Dynamic Attribute Modification
- Application Program Considerations
- Values Associated with Dynamic Attribute Modification
- Typical Dynamic Attribute Values
- Coding Example: Dynamic Attribute Values
- Coding Example: Dynamic Attribute (Invalid) Values

***XIII. Appendix A: Purge and Rollback Calls***

- The Purge (PURG) Call
- The Rollback (ROLL) Call
- The Rollback (ROLB) Call
- Review: Menu Screen and Program-to-Program Message Switch Concepts