



J2I Study Abroad Training Program
 プログラミング入門コース (Basic IT)

Softbridge Solutions Japan Co.,Ltd.
 TEL: 03-5280-7818
 FAX: 03-5280-0503
 URL: <http://www.j2i.jp>

ITコース				
No	Module	Duration (hrs)	Days	Comment
1	Basics of PC Microsoft Windows 2000 Network and Operating System Essentials	8	2	Introduction to PC, Windows OS Operating + Network Command
2	MS - OFFICE (MS-EXCEL)	8	2	MS-EXCEL- a Data Analysis
3	Programming Tech (Flow Chart + Algorithm) Using Visual Basic 6.0	28	7	Programming Basics
4	MS - SQL Server 2000 Database	36	9	Introduction to Relational Database Management System
5	Developing ASP.NET Web Applications Using Visual Studio .NET	80	20	Microsoft .NET programming
6	Web Development Skills from ASP to Microsoft ASP.NET	40	10	
7	Programming with Microsoft ADO.NET	40	10	
8	Mini Project (Using ASP.NET + SQL Server)	40	10	Project
8A	Preparation & Submissions of Assignments - Case Studies	12	3	Assignment & Exam Schedule
	Self Study/ Exam Preparation	20	5	
	Oral / Practical Exams	4	1	
	Theory Exams	4	1	
Total IT Hours / Days		320	80	



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No	Module	Duration (hrs)
1	Basics of PC Microsoft Windows 2000 Network and Operating System Essentials	8
Pre-requisites : - Basic Knowledge of Computer & Network - Able to Read, Write & Converse in English		
Objective : Understand the - Features of Windows 2000 - Basics of networking with Windows 2000 - the types of user accounts, security features - Administrative tasks. - Common protocols used in the a Windows 2000 network - Understand TCP/IP, Name resolution, routing, and IP addressing - Network communication models - Various types of network architectures - Physical Components - Protocols for remote access communication - Client and Server tech. used in accessing Web services		
Topics		
1	Introduction to Windows 2000 and Networking - Windows 2000 Operating Systems - Introduction to Networks - Windows 2000 Implementation of Networking	
2	Administration of a Windows 2000 Network Topics - Windows 2000 Help - Administrative Tasks - Administrative Tools - Use Online Help - Describe the tools used to perform routine administrative tasks - Control Panel - System Properties - System Information - Event Viewer - Windows Task Manager - Performance - Printers - Shared Folders - Disk Management - Backup - Security Management - Network - Microsoft Management Console	
3	Network Securing on User Accounts - Groups - User Rights - Permissions	
4	Examining the Network - Scope of Networks - Basic Connectivity Components - Network Topologies - Network Technologies - Expanding the Network	
5	Examining the Network Protocols - Introduction to Protocols - Protocols and Data Transmissions - Common Protocols - Other Communication Protocols - Remote Access Protocols	



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6	Examining TCP/IP <ul style="list-style-type: none">- Introduction to TCP/IP- TCP/IP Protocol Suite- Name Resolution- Examining the Data Transfer Process- Routing Data
7	Examining IP Addressing <ul style="list-style-type: none">- Classful IP Addressing- Subnetting a Network- Planning IP Addressing- Assigning TCP/IP Addresses
8	Optimizing IP Address Allocation <ul style="list-style-type: none">- Classless Inter-Domain Routing (CIDR)- Binary IP Addresses- Binary Subnet Masks- IP Address Allocation Using CIDR
9	Examining Web Services <ul style="list-style-type: none">- Identifying Internet Concepts- Using Client Technologies- Connecting to the Internet- Identifying Web Server Concepts



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No	Module	Duration (hrs)
2	MS - OFFICE (EXCEL)	8
Pre-requisites : <ul style="list-style-type: none">- Basic Knowledge of Computer Needed & Windows OS- Able to Read, Write & Converse in English		
Objective : Understand the <ul style="list-style-type: none">- Gain a good understanding of the Microsoft Office (Excel)- Use of Excel in Data Analysis		
Topics		
<ul style="list-style-type: none">- Performing calculations- Analysing data using filters, sorts, scenarios, pivot tables and charts- using macros and database tools		



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No	Module	Duration (hrs)
3	Programming Tech (Flow Chart + Algorithm) Using VB	28
Pre-requisites : - Basic Knowledge of Computer Needed & Windows OS - Able to Read, Write & Converse in English		
Objective : Understand & Develop Confidence in ; - Alogorithm, Program Logic and Pseudocode - Gain knowledge of Programm Design & logic using VB - Gain a good understanding of development of desktop applications		
Topics		
1	Program design - Top down; hierarchy charts - Modular (functions, procedures) - IPO (input-process-output) - Pseudocode - Flowcharts	
2	Code generation; design and style - Test case development - Desk checking - Debugging - Documentation	
3	Program development software - Login, Logout - Text Editor - Compiling, linking, and executing - Systems utility commands: PRINT, COPY, TYPE, etc.	
4	Data Types - Integer - Real - Character - User Defined	
5	Control Structures - Sequence - Selection - Repetition	
6	Arrays - One-dimensional - Using arrays - Reading/Writing the elements of an array - Building an array - Manipulating an array	
7	Number Systems - Binary (Two's complement) - Octal - Hexadecimal - Conversions between bases	



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No	Module	Duration (hrs)
4	MS - SQL Server 2000 Database	36
Pre-requisites : A Thorough Knowledge of Microsoft Windows® 2000 operating system & its Network Abilities which would include <ul style="list-style-type: none"> - Connect clients running Windows 2000 to networks and the Internet - Configure the Windows 2000 environment - Create and manage user accounts - Manage access to resources by using groups - Configure and manage disks and partitions, including disk striping and mirroring - Manage data by using the NTFS file system - Implement Windows 2000 security - Optimize performance in Windows 2000 		
Objective : Understand how to effectively use Microsoft SQL Server™ 2000 in .NET Framework		
Topics		
1	SQL Server Overview What Is SQL Server? SQL Server Integration SQL Server Databases SQL Server Security Working with SQL Server	
2	Overview of Programming SQL Server Designing Enterprise Application Architecture SQL Server Programming Tools The Transact-SQL Programming Language Elements of Transact-SQL Additional Language Elements Ways to Execute Transact-SQL Statement	
3	Creating and Managing Databases Creating Databases Creating Filegroups Managing Databases Introduction to Data Structures	
4	Creating Data Types and Tables Creating Data Types Creating Tables Generating Column Values Generating Scripts	
5	Implementing Data Integrity Types of Data Integrity Enforcing Data Integrity Defining Constraints Types of Constraints Disabling Constraints Using Defaults and Rules Deciding Which Enforcement Method to Use	
6	Planning Indexes Introduction to Indexes Index Architecture How SQL Server Retrieves Stored Data How SQL Server Maintains Index and Heap Structures Deciding Which Columns to Index	



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7	Creating and Maintaining Indexes Creating Indexes Creating Index Options Maintaining Indexes Introduction to Statistics Querying the sysindexes Table Setting Up Indexes Using the Index Tuning Wizard Performance Considerations
8	Implementing Views Introduction to Views Advantages of Views Defining Views Modifying Data Through Views Optimizing Performance by Using Views Performance Considerations
9	Implementing Stored Procedures Introduction to Stored Procedures Creating, Executing, Modifying, and Dropping Stored Procedures Using Parameters in Stored Procedures Executing Extended Stored Procedures Handling Error Messages Performance Considerations
10	Implementing User-defined Functions What Is a User-defined Function? Defining User-defined Functions Examples of User-defined Functions
11	Implementing Triggers Introduction to Triggers Defining Triggers How Triggers Work Examples of Triggers Performance Considerations
12	Programming Across Multiple Servers Introduction to Distributed Queries Executing an Ad Hoc Query on a Remote Data Source Setting Up a Linked Server Environment Executing a Query on a Linked Server Managing Distributed Transactions Modifying Data on a Linked Server Using Partitioned Views The following lab is covered in this module: Using Distributed Data
13	Optimizing Query Performance Introduction to the Query Optimizer Obtaining Execution Plan Information Using an Index to Cover a Query Indexing Strategies Overriding the Query Optimizer
14	Analyzing Queries Queries That Use the AND Operator Queries That Use the OR Operator Queries That Use Join Operations
15	Managing Transactions and Locks Introduction to Transactions and Locks Managing Transactions SQL Server Locking Managing Locks



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No	Module	Duration (hrs)
5	Developing ASP.NET Web Applications Using Visual Studio .NET	80
Pre-requisites : - Basic Knowledge of Computer Needed & Windows OS. - Able to Read, Write & Converse in English - Strong Programming Logic - Good Implementation Knowledge of Visual Basic		
Objective : - Fundamentals of Web application - Site implementation using Microsoft ASP.NET and Microsoft Visual Basic .NET - Create an ASP.NET Web application that delivers dynamic content to Web site		
Topics		
1	Conceptual framework of the .NET Framework and ASP.NET. - Introduction to the .NET Framework - Overview of ASP.NET - Overview of the Lab Application - Resources	
2	Using Microsoft Visual Studio .NET - Overview of Visual Studio .NET - Creating an ASP.NET Web Application Project	
3	Using Microsoft .NET-Based Languages - Overview of the .NET-Based Languages - Comparison of the .NET-Based Languages - Creating a Component Using Visual Studio .NET	
4	Creating a Microsoft ASP.NET Web Form - Creating Web Forms - Using Server Controls	
5	Adding Code to a Microsoft ASP.NET Web Form - Using Code-Behind Pages - Adding Event Procedures to Web Server Controls - Using Page Events	
6	Tracing in Microsoft ASP.NET Web Applications - Understanding Tracing - Remote Debugging	
7	Validating User Input - Overview of User Input Validation - Using Validation Controls - Page Validation	
8	Creating User Controls - Adding User Controls to an ASP.NET Web Form - Creating User Controls	
9	Accessing Relational Data Using Microsoft Visual Studio .NET - Overview of ADO.NET - Creating a Connection to the Database - Displaying a DataSet in a List-Bound Control	



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10	Accessing Data with Microsoft ADO.NET - Introduction to Using ADO.NET - Connecting to a Database - Accessing Data with DataSets - Using Multiple Tables - Accessing Data with DataReaders
11	Calling Stored Procedures with Microsoft ADO.NET - Overview of Stored Procedures - Calling Stored Procedures
12	Reading and Writing XML Data - Overview of XML Architecture in ASP.NET - XML and the DataSet Object - Working with XML Data - Using the XML Web Server Control
13	Consuming and Creating XML Web Services - Overview of Using XML Web Services - Calling an XML Web Service by HTTP - Using a Proxy to Call an XML Web Service - Creating an XML Web Service
14	Managing State - State management - Application and Session Variables - Cookies and Cookieless Sessions
15	Configuring, Optimizing, and Deploying a Microsoft ASP.NET Web Application - Using the Cache Object - Using ASP.NET Output Caching - Configuring an ASP.NET Web Application - Deploying an ASP.NET Web Application
16	Helping to Protect a Microsoft ASP.NET Web Application - Web Application Security Overview - Working with Windows-Based Authentication - Working with Forms-Based Authentication - Overview of Microsoft Passport Authentication
17	Review Review of Material Covered Introduction to the Project



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6	Web Development Skills from ASP to Microsoft ASP.NET	40
Pre-requisites : - Knowledge of HTML pages with tables, images, and forms - Experience using a scripting language, such as Microsoft Visual Basic® Scripting Edition or JavaScript - Familiarity with a Microsoft .NET-based programming language		
Objective : - Understand ASP and ASP.NET - Develop a ASP.NET Web application by using Microsoft Visual Studio® .NET - Develop a ASP.NET Web Application UI - Understand Trace feature, debugger to debug, Access databases - Explain how XML Web services is beneficial to distributed Internet computing - Create an XML Web service by using Visual Studio .NET - Create client code that can create and call a remote XML Web service - Access and display Extensible Markup Language (XML) data in an ASP.NET Web application - Use caching to improve Web application performance		
Topics		
1	Introduction to Microsoft ASP.NET Web Application Development Introduction to ASP.NET Developing an ASP.NET Web Application Using Visual Studio .NET .NET Programming Model Changes	
2	Developing a Microsoft ASP.NET Web Application User Interface Creating an ASP.NET Web Application User Interface Validating User Input Creating and Using User Controls in an ASP.NET Web Form Processing ASP.NET Web Forms	
3	Debugging Microsoft ASP.NET Web Applications Tracing in ASP.NET Web Applications Debugging ASP.NET Web Applications	
4	Accessing Data Using Microsoft ADO.NET Overview of ADO.NET Reading Data Using DataReaders Programmatically Accessing Data Using DataSets Visually Generating DataSets Data-Bound Controls Best Practices for Secure and Reliable Data Access	
5	Managing State in a Microsoft ASP.NET Web Application Introduction to State Management Session State Management Client-Side State Management	
6	Authenticating Users ASP.NET Authentication Model Implementing Windows-Based Authentication in ASP.NET Web Applications Implementing Forms-Based Authentication in ASP.NET Web Applications	
7	Creating and Consuming XML Web Services Introduction to XML Web Services Creating an XML Web Service Creating an XML Web Service Client	
8	Calling COM Component ASP.NET and COM Interoperability Calling Com Objects from ASP.NET Web Forms	



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9	Migrating ASP Web Applications to Microsoft ASP.NET Migrating an ASP Web Page Migrating an ASP Application
10	Deploying Microsoft ASP.NET Web Applications ASP.NET Application Deployment Methods Maintaining a Deployed ASP.NET Web Application
11	Target : Accessing XML Data XML in Microsoft .NET Displaying XML Data on a Web Form XML and the DataSet Object Improving Microsoft ASP.NET Web Application Performance Using Caching Using the Cache Object Using ASP.NET Output Caching Migrating ASP Web Applications to Microsoft ASP.NET



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No	Module	Duration (hrs)
7	Programming with Microsoft ADO.NET	40
Pre-requisites :		
<ul style="list-style-type: none"> - Good Implementation Knowledge of Visual Basic & HTML - Good Understanding of ASP & ASP.Net 		
Objective :		
<ul style="list-style-type: none"> - Teach developers to build data-centric applications and Web services with Microsoft ADO.NET, Microsoft SQL Server™ 2000, and the Microsoft .NET Framework 		
Topics		
1	Data-Centric Applications and ADO.NET Design of Data-Centric Applications ADO.NET Architecture ADO.NET and XML	
2	Connecting to Data Sources Choosing a .NET Data Provider Defining a Connection Managing a Connection Handling Connection Exceptions Connection Pooling	
3	Performing Connected Database Operations Working in a Connected Environment Building Command Objects Executing Commands That Return a Single Value	
4	Building DataSets Working in a Disconnected Environment Building DataSets and DataTables Binding and Saving a DataSet Defining Data Relationships Modifying Data in a DataTable Sorting and Filtering	
5	Reading and Writing XML with ADO.NET Creating XSD Schemas Loading Schemas and Data into DataSets Writing XML from a DataSet	
6	Building DataSets from Existing Data Sources Configuring a DataAdapter to Retrieve Information Populating a DataSet Using a DataAdapter Configuring a DataAdapter to Update the Underlying Data Source Persisting Changes to a Data Source How to Handle Conflicts	
7	Building and Consuming a Web Service That Uses ADO.NET Building and Consuming a Web Service That Returns Data Build a Web service. Consume a Web service in a client application. Troubleshoot errors in an ADO.NET application	



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8	Mini-Project	Document Management System	40
		On-line Examination System	
		Course Management System	
		Online Shopping Cart	
		Human Resource Management System	
		eMail Engine (Similar to Outlook Express)	
		Application of SOAP Protocol (Example: Exchange of information from decentralized, distributed environment like the ATCs and integrating to NRC)	
Pre-requisites :			
- Thorough Knowledge of Microsoft .NET			
- Should be able to develop Application using any of the above mentioned technologies			
Objective :			
Should be able to relate and understand the practical usage of all learnt technologies given any development Module			
Steps to Project Completion			
1	Base-Line Business Requirements Statement (BRS) is given	Assumptions should be created SRS should be developed - Data Flow Diagrams (Level 0 & 1) - Business Process Flows Detailed Design Specification (DDS)	
2	Non base-line BRS document is given	Impact Analysis Document (IA) Change Request Document Feasibility Report	
3	Final SRS & DDS	Presentation	