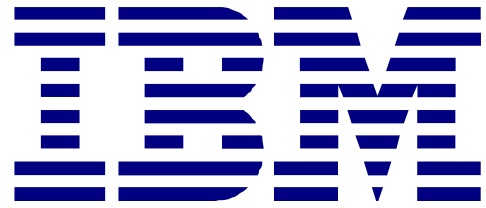


Technical Students' Internship Program

Developers' Internship Program

Academic Initiative



**IBM Courseware**  
May 2006

# Information Management (Databases)

## **DB2 Family Fundamentals**

This course provides you with information about the functions of IBM's DB2 Universal Database (DB2 UDB), a relational database manager which may be installed under a variety of operating systems on many hardware platforms. The course includes a discussion of how the DB2 UDB products provide services. The focus is on the services DB2 provides and how we work with DB2 UDB, not on its internal workings.

## **DB2 SQL Workshop**

An introduction to SQL language for anyone needing to write, support, or understand SQL queries. On completion of this course, you should be able to write basic Data Manipulation Language (DML) SQL statements (SELECT, INSERT, UPDATE, and DELETE) and basic Data Definition Language (DDL) SQL statements (CREATE TABLE and CREATE VIEW).

## **DB2 SQL Workshop for Experienced Users**

This course teaches you how to make use of advanced SQL techniques to access DB2 databases in different environments. This course is appropriate for customers working in all DB2 environments, that is OS/390, z/OS, VM/VSE, AS/400, UNIX, Windows and OS/2.

## **DB2 Stored Procedures Programming Workshop**

This course is designed to provide the database application designer or application programmer with the knowledge to recognize when an IBM stored procedure is the correct solution for an application. It also covers how to set up the environment to support stored procedures, how to use the DB2 Development Center, how to CALL a stored procedure, how to create a stored procedure using DDL, and how to troubleshoot a stored procedure.

## **DB2 UDB Admin workshop**

This course teaches how to perform advanced database administration tasks using DB2 Universal Database. These tasks include client administration, automatic maintenance features, problem determination, advanced load usage, parallelism and SMP exploitation, DB2 Governor, audit facility, distributed data management, remote administration, multidimensional data clustering, online reorganizations, use of the Health Center, and federated database support.

## **DB2 Universal Database Advanced Administration Workshop**

This course teaches you how to perform basic database administration tasks using IBM DB2 Universal Database. These tasks include creating and populating databases and implementing a logical design to support recovery requirements.

### **DB2 Universal Database Advanced Programming**

This course teaches you how to take advantage of advanced programming techniques to access DB2 databases in the workstation environment. These techniques can be utilized in addition to standard embedded SQL calls that are addressed in the prerequisite offering, DB2 UDB Programming Fundamentals.

### **DB2 Universal Database Programming Fundamentals**

This course enables you to acquire the skills necessary to produce application programs that manipulate DB2 databases. Emphasis is on embedding Structured Query Language (SQL) statements and preparing programs for execution.

### **DB2 UDB V8.1 Database Administration Certification Preparation Course**

This class is a review of the objectives and material required to better prepare you for the DB2 UDB V8 Certification Tests: Exam 700 (DB2 UDB V8 Family Fundamentals) and Exam 701 (DB2 UDB V8 Database Administration for Linux, UNIX, and Windows)

### **DB2 Universal Database V8.1 System Administration**

This course provides students with the knowledge and skills they need to perform the routine tasks of a DB2 Universal Database Systems Administrator. Through instructor presentations, they will learn about the tools and commands needed to configure and maintain instances and database objects. Through lab exercises, students will have the opportunity to practice the skills they learned in a simulated database server environment.

### **DB2 UDB programming using Java for Linux, Unix and Windows**

This course will teach the student how to code dynamic SQL in Java using JDBC, and how to code embedded static SQL statements in a Java program using SQLJ. It also teaches how to code and call stored procedures in Java, and how to code UDFs in Java.

### **IBM Informix Dynamic Server Administration (L1-846)**

This course teaches you the skills necessary to successfully administer one or more database servers. You will learn how to configure and initialize a database server instance, configure and test client connectivity, configure and manage memory and disk usage, plan and implement system maintenance tasks, and configure the server for OLTP or decision support.

### **IBM Informix Advanced SQL (FN 757)**

This course focuses on SQL querying using complex outer joins, correlated subqueries, and other advanced SQL concepts. Students will use optimizer directives available in Informix

Dynamic Server, learn the effects of transaction logging and SQL transactions, create and use stored procedures, and develop an SQL code review checklist.

### **Information Management Basics (Semester Format)**

This course will familiarize the student with the features, functions, and services provided by DB2, a relational database management system. Topics covered include installation; data modeling and design; relational databases; database query languages; relational database design; distributed databases; physical database design; information storage and retrieval; and mapping DB2 vs Oracle.

### **Introduction to Business Intelligence and Data Warehousing (DW03)**

This course is designed to provide the students with a fundamental understanding of Data Warehousing and Business Intelligence and how they support a Knowledge Management environment. It also introduces the basic principles of Knowledge Management, focusing on the need for and use of information.

### **Introduction to IBM DB2 Universal Database**

The course trains the student on an in-depth knowledge of basic SQL, DML, DDL, and an understanding of database objects (tables, views, etc.) in the DB2 database. A basic understanding of the concepts and features of DCL, database creation, data types, stored procedures, programming, components and packaging (SDK, EEE, ESE, etc.), protocols supported, installation of products, GUI tools, CLP, basic isolation levels, and import/export is also covered. During the course the student will build and run a DB2 UDB database using data made available in unload format. The database and data are simple, but will illustrate the basic create and load tasks.

### **SQL Fundamentals for IBM DB2**

This guide shows how to express commonly asked business questions as database queries by using standard SQL queries.

### **Relational Database Design**

This course presents a methodology for modeling and designing relational databases. After completing this course, you should be able to design relational databases and consider logical and physical aspects including integrity requirements during the design.

### **Up and Running with DB2 for Linux**

This courses will teach a student to identify the features and functionality of DB2 Universal Database, version 8, for the Linux operating system with the goal of installing, configuring and administering a DB2 instance and its included databases to an minimum accuracy of 70%.

### **Generating & Integrating XML Content with DB2**

This course is designed to teach the functions of DB2 UDB XML Extender, the search capability of DB2 Net Search Extender, and to introduce the students to non-traditional ways of using DB2 to work with XML data. The students will store XML data in DB2 and will create XML documents from traditional DB2 data. They will search XML documents stored

in DB2 tables, create DB2 Web services, and access XML documents as though the documents were relational tables.

# Application Servers and Business Integration

## **Advanced Features of IBM WebSphere Business Modeler V6 (BI819)**

This course teaches business process management methodology and the advanced features and functions of WebSphere Business Modeler V6, such as advanced simulation, goal analysis, and publishing server. Students prepare goals based on process analyses and build their own models based on business scenarios.

## **IBM WebSphere Application Server V6.0 Administration**

This course teaches students how to install, configure, and maintain IBM WebSphere Application Server V6 "base" and Network Deployment, and to deploy enterprise Java applications in a single machine or clustered configuration. This course is designed for administrators who install, configure, and manage Web-based applications on WebSphere Application Server.

## **IBM WebSphere Portal Version 5 Administration**

This course exposes the system developer, portal architect or administrator to the processes and practices for the administration of WebSphere Portal Enable Version 5.

## **IBM WebSphere Portal Version 5.0 Application Development**

IBM's WebSphere Portal Solution provides a single point of interaction with dynamic information, applications, processes and people to help build business-to-employee (B2E), business-to-business (B2B) and business-to-consumer (B2C) portals. This course offers WebSphere Portal application developers the opportunity to build the skills and knowledge to code robust portlet applications using WebSphere Studio Application Developer and WebSphere Portal's Portlet Toolkit. This course is targeted to J2EE developers who will be developing the portlets and JSPs needed to build portlet applications for WebSphere Portal Server. The course provides a minimal exposure to portal administration consistent with the needs of the developer role.

## **IBM WebSphere Portal Version 5.0 Installation and Deployment Application Server V5**

Learn how to develop and test Enterprise Java Beans using IBM WebSphere Studio Application Developer Version 5.1.1 and deploy a J2EE enterprise application to IBM WebSphere Application Server Version 5.1. This course is based on the J2EE 1.3 and the EJB 2.0 specifications. It introduces extensions to these standards provided by WebSphere Application Server Version 5. The course teaches how to design enterprise applications in which core business functionality is encapsulated in EJBs and how to develop EJBs as reusable components. It provides an in-depth explanation of the EJB 2.0 specification, explores tools for developing EJBs in WebSphere Studio Application Developer in extensive hand-on exercises, and discusses best practices for designing and building EJB-based applications.

## **WebSphere Business Modeler for Business Process Management (BI182)**

This course explains how to use Business Process Management (BPM) and Business Activities Management (BAM) practices while using the powerful features and capabilities of WebSphere Business Modeler V6.

### **Integrating Using WebSphere Integration Developer and Process Server (BI111)**

This course shows you how to build and deploy process integration solutions using the WebSphere Integration Developer (WID) and WebSphere Process Server (WPS). It examines the concepts, architecture, components, processes, and procedures used in implementing an integrated solution.

### **Introduction to WebSphere BI Modeler(BI818)**

This course will introduce Modeling of business processes using WBI Modeler - an easy-to-use process-modeling tool providing powerful analyses, animated simulations, and detailed reporting..

### **Developing Web Applications with IBM Rational Application Developer V6**

This course is intended for developers who are already familiar with J2EE Web application development, and wish to understand the capabilities of IBM Rational Application Developer for WebSphere Software V6 for developing such applications. The course explores the tools used to create, test, debug, and package J2EE Web applications, including the wizards used to create servlets, HTML pages, and JSP pages.

### **Servlet and JSP Development with IBM Rational Application Developer V6**

This course is designed to introduce Java developers to the development and testing of server-side applications based on the J2EE component model, using IBM WebSphere and IBM Rational tools. Students learn to develop servlets, JSP pages, JSP custom tags and JavaBeans with IBM WebSphere and IBM Rational tools. This currently includes Rational Application Developer for building servlets, JSP pages, JSP custom tags and JavaBeans, and WebSphere Application Server for application deployment integration testing.

### **Developing EJBs with IBM Rational Application Developer V6**

This course teaches students how to develop and test Enterprise Java Beans (EJBs) using IBM Rational Application Developer Version 6, and to deploy J2EE enterprise applications to IBM WebSphere Application Server V6. It also covers how to design enterprise applications in which core business functionality is encapsulated in EJBs, and how to develop EJBs as reusable components.

### **IBM WebSphere MQ V5.3 Application Programming**

This course teaches the basic skills of designing and writing business programs that issue calls to the Message Queue Interface (MQI). This course is designed for experienced business

application programmers who need to develop programs using the messaging and queuing techniques provided by the WebSphere MQ products.

### **IBM WebSphere MQ V6.0 Programming Using Base Classes for Java**

This course is designed to teach Java application programmers to develop basic WebSphere MQ applications written in Java. This course is intended for Java programmers who want to learn to write basic WebSphere MQ applications, and WebSphere MQ application programmers who have had some experience with Java programming.

### **IBM WebSphere MQ V6.0 Programming Using JMS**

This course is designed to teach Java application programmers to develop basic WebSphere MQ applications written in Java using JMS. Students also learn the role of MDB as JMS message consumers. The course contains extensive machine exercises. This course is intended for Java programmers who want to learn to write basic WebSphere MQ applications using JMS.

### **IBM WebSphere Commerce V5.6 Implementation**

This course covers WebSphere Commerce V5.6 implementation tasks which include installing and configuring the WebSphere Commerce server and payments server, setting up stores and the server features they need, using the line of business tooling to populate and manage stores, using administrative tools to maintain the site, and using the development tooling to customize the site.

### **Introduction to XML and Related Technologies**

This course provides an introduction to XML (eXtensive Markup Language) and related technologies. Students will gain conceptual and practical knowledge of the concepts that are required to work with XML. The course will build the basic skills to enable architects, designers, analysts, developers, testers, and administrators to use XML and its related technologies in the context of building e-business applications. The course is a 2.5-day classroom course with hands-on lab exercises that reinforce the lecture material.

### **Introduction to Programming XML and Related Technologies**

This course provides an introduction to eXtensive Markup Language (XML) and related technologies, together with a working foundation to program applications using XML. The course is a 4.5-day classroom course with hands-on lab exercises that reinforce the lecture material.



# Application Modeling and Development with Rational SW

## **Java Fundamentals Using Eclipse (12 Week Semester Format)**

This course is intended to teach college students Object-Oriented Programming and Java programming basics in a University setting. We assume that a course meets 3 times a week over the course of a 15-week semester and class meetings last for 50 minutes to an hour. We assume there are 40 hours of lecture available.

## **Essentials of Developing Visual Basic .NET Applications with Rational XDE**

This course is intended for Visual Basic developers who are interested in learning object-oriented programming concepts, the UML, and about how XDE can help make them more efficient in their work. This course introduces the student to basic object-oriented concepts such as encapsulation, hierarchy, and modularity. The course also explores XDE functionality and modeling capabilities that will enhance development of higher quality software.

## **Introduction to Web Services with IBM Rational Application developer V6**

This course is intended for Java application developers who are interested in learning how to implement J2EE Web services using SOAP, WSDL and UDDI. Prior experience developing Web services is not required.

## **Introduction to Java using IBM Rational Application developer V6**

This course is intended for developers who are new to the Java programming language. It covers the principles of object-oriented development, the Java (J2SE 1.4) syntax, object creation and key classes and their use.

## **Essentials of Rational Application Developer for WebSphere Software**

This course helps designers and developers get started with using Rational Application Developer for WebSphere Software. Students gain a hands-on experience with Rational Application Developer as they are introduced to a number of features, supporting concepts, and integration with other tools. Students learn the basic skills needed to use Rational Application Developer for developing applications while also learning basic UML editing techniques, static code analysis, code review, and runtime analysis.

## **Essentials of Rational Software Architect**

This course helps designers and developers get started with using Rational Software Architect. Students gain a hands-on experience with Rational Software Architect as they are introduced to a number of features, supporting concepts, and integration with other tools. Students learn student learns the basics of model templates and using the UML diagram types Rational Software Architect supports. Students also learn about transformations and patterns, and how to analyze the architectural structure of an application.

### **Essentials of Rational RequisitePro**

This course provides instruction on the use of RationalRequisitePro Rational tool for capturing and managing requirements for a project. Hands-on labs are used to enhance the concepts presented in the Requirements Management with Use Cases course. Students will gain an understanding of RequisitePro project structure by using the tool to apply software development best practices as recommended in the Rational Unified Process The computer labs guide students through building and adding data to a class project within the context of a controlled requirements management process. The labs completed in class focus on applying RequisitePro in a work environment.

### **Essentials of Rational Unified Process**

Upon completion of the course, participants will understand Rational best practices for software development, be familiar with the guidance RUP provides for iterative development and with the structure and navigation facilities of RUP, be introduced to the content of RUP and its application and RUP tailoring and implementation choices, and have simulated the use of RUP on a project.

### **Essentials of Rational XDE**

After completing this course, you will be able to build a simple project and an XDE model. You will learn more about Rational Best Practices and how the Rational Unified Process implements them. Successful development requires a robust development process, which is where the RUP comes in. In addition, you will identify programs that integrate with Rational XDE, like Visual Trace, ClearCase, ReqPro, and SoDA.

### **Essentials of Visual Modeling with UML 2.0**

After completing this course, you will be able to define the history and current application of object technology, explain what the UML represents, explain abstraction, encapsulation, modularity, and hierarchy, describe the physical structure of a class, identify the relationship between a class and an object, and define polymorphism and generalization.

### **Fundamentals of Rational Rose**

After completing this course, you will be able to explain the value of visual modeling, have a basic level of tool competence through practical hands-on use, and have seen how round-trip engineering works in Rational Rose.

### **Principles of Software Testing for Testers**

After completing this course, you will be a more knowledgeable software tester. You will be able to better understand and describe the basic concepts of functional (black box) software testing, identify a number of test styles and techniques and assess their usefulness in your context. You will also understand the basic application of techniques used to identify useful ideas for tests and help determine the mission and communicate the status of your testing with the rest of your project team. You will be able to characterize a good bug report, peer-review the reports of your colleagues, and improve your own report writing and you will understand where key testing concepts apply within the context of the Rational Unified Process.

### **Rational - Mastering Requirements Management with Use Cases**

This course three days of training in requirements management and use-case modeling techniques. The course focuses on eliciting and managing the changing requirements of a project; analyzing the problem, defining the product vision and feature requirements, defining software requirements with use cases, and requirement attributes, and maintaining traceability,

change management, and impact analysis for project scope management. The course shows how use-case modeling and requirements management techniques are used to define and document requirements that meet stakeholder needs. In-class exercises will give students practical experience in developing use cases.

# **Grid Computing**

## **Globus Toolkit V3 Setup and Configuration**

This course will teach the students how to install and configure Globus Toolkit 3.0. The course strategy is to build some basic conceptual knowledge about the Globus architectures and the related Web services underpinnings, and then show how to install and configure the related software. The installation will be tested by using the Grid facilities via the Globus-provided clients, exercising the core services, the base services, and the sample services.

# **Networking, monitoring and security with Tivoli SW**

## **IBM Tivoli Access Manager for Business Integration 5.1 System Administration**

This course includes hands-on labs targeted towards system or network administrators responsible for IBM WebSphere MQ security. Students will learn how to install IBM Tivoli Access Manager for e-business and IBM Tivoli Access Manager for Business Integration. They will be presented with IBM Tivoli Access Manager for e-business and IBM Tivoli Access Manager for Business Integration concepts and cover PKI and certificate management, user registry integration, auditing and logging, TAMBI commands, and sending and receiving messages with integrity and privacy.

## **IBM Tivoli Access Manager for e-business 5.1 Architecture and Solution Design**

This course uses a case-study approach to introduce the high-level architecture and detailed design principles of IBM Tivoli Access Manager for e-business. The course begins with guidelines to initiate an Access Manager for e-business engagement. Business and Technical requirements are assessed. After specifying the Integration Requirements, a high-level solution architecture is presented. User Registry design methodology is discussed. Students will integrate the Authentication architecture of the protected objects with Access Manager for e-business. PKI integration issues are explored. Authorization Policy implementation using Authorization Servers and Authorization API is presented. A detailed methodology to quantitatively size Access Manager components is presented. The course concludes with the discussion of the integration with other products.

## **IBM Tivoli Access Manager for e-business 5.1 System Administration**

The first two days of the course are spent on the topics from the base functionality. Hence the students who have never seen or used this product before become comfortable with IBM Tivoli Access Manager for e-business base in the first two days of the class. Once the students understand the base product, WebSEAL is introduced on the third day and then the students install WebSEAL. After WebSEAL units are completed, students learn about the Web server plug-ins and the Web application server integration.

## **IBM Tivoli Provisioning Manager and Intelligent Orchestrator 2.1 Administration**

IBM Tivoli Provisioning Manager and Intelligent Orchestrator 2.1 is used to manage data centers efficiently by sharing resources. This product is part of IBM On Demand strategy. This course covers administrative functions and basic product use.

## **IBM Tivoli Provisioning Manager and Intelligent Orchestrator 2.1 Workflows and Automation Packages**

This instructor-led course provides in-depth instruction on IBM Tivoli Intelligent Orchestrator workflows and automation packages. The course centers around hands-on workflow writing laboratories designed to provide experience solving problems that the students will encounter in their job roles.

## **Tivoli Risk Manager 4.2**

This course explains IBM Tivoli Risk Manager 4.2 based solutions. Upon completion of this course student will be able to describe different components of Risk Manager 4.2, configure Tivoli Enterprise Console Server to receive, process, and correlate Risk Manager event and Manage Risk Manager events using the Tivoli Enterprise console.

### **IBM Tivoli Storage Manager 5.2 Implementation**

This five day instructor-led course provides hands-on practice with implementing a data management strategy with IBM Tivoli Storage Manager 5.2. Students will install and configure a Storage Manager server and client, set up policies and schedules, then perform backup, restore, archive, and retrieve processes in daily lab exercises. Students will spend approximately half of their class time in lecture and the other half in hands-on labs.

### **IBM Tivoli Storage Manager 5.2 Total Integration**

This course is designed to provide in-depth administration training with IBM Tivoli Storage Manager Extended Edition, at a skill level that is beyond the Implementation course. The classroom setup for this training will allow students to explore the possibilities available with a Storage Area Network. This includes configuring server-to-server and virtual volumes, tape library sharing, performing LAN-free backups, and installing and using SANergy. In addition students will learn how to setup problem determination and optimize IBM Tivoli Storage Manager. The students will incorporate Disaster Recovery Manager to improve and automate recovery and create total solution with other IBM Total Storage Manager products like IBM Tivoli Storage Manager for Database, Hardware, Mail and Applications.

### **IBM Tivoli Storage Manager 5.2 Update and Migration Topics**

This course covers all of the updates of IBM Tivoli Storage Manager prior to 5.1 through the 5.2 release. Students will learn new data flow concepts, including Server-free and using a Storage Area Network or SAN. There are topics covering new ways to backup, restore, and move your data. Students will learn new methods to restore data, including bare machine recovery as well as learning the latest values for tuning parameters for improved performance.