



## CIW Webmaster Certification Online – IT104 380 Hours

*(Foundations, Master Designer with Macromedia, Developer, Enterprise Developer, Administrator and Security Analyst Specialization Tracks)*

### **Foundations**

#### **Networking Fundamentals**

##### **Overview/Description**

To introduce the main components and principles of networking

##### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

##### **Lesson Objectives**

#### **Networking Fundamentals**

- identify the characteristics of the main network-design models and architectures.
- identify the transmission media and technologies that support LANs and WANs.
- match network devices to their function.
- distinguish between different network topologies.
- recognize the features of the main network operating systems.
- distinguish between different network devices, topologies, and operating systems.
- distinguish between the OSI reference model and the TCP/IP stack.
- distinguish between IP address classes and perform simple subnet calculations.
- distinguish between the OSI model and TCP/IP stack and recognize IP address components.

#### **Internet Fundamentals**

##### **Overview/Description**

To introduce the Internet, basic Internet technologies including connection, browser search, and cache technologies

##### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

##### **Lesson Objectives**

#### **Internet Fundamentals**

- identify common uses of the Internet and recognize how Internet standards are established.
- establish a dial-up connection to the Internet using a connection wizard.
- navigate web pages using a web browser.
- configure an Internet connection and browse web pages.
- identify the functions and features of search engines.
- recognize how to configure client-side and proxy caching on Internet applications.
- perform a search and configure proxy server settings on a web browser.



## **Internet Client Infrastructure and Applications**

### **Overview/Description**

To identify the client components required to connect to an Internet or intranet

### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

### **Lesson Objectives**

#### **Internet Client Infrastructure and Applications**

- identify the main functions of an operating system and distinguish between client and network operating systems.
- recognize the PC components required for network connectivity.
- identify the characteristics and functionality of operating systems and PC components.
- configure TCP/IP and name resolution on an Internet client.
- recognize how to configure settings on a web browser.
- recognize how to use an e-mail client to send and receive e-mails.
- recognize how to use FTP and Telnet clients.
- configure Internet client applications.
- identify issues that can affect the performance of Internet clients and local area network (LAN) servers.
- identify security threats to Internet clients and the methods used to mitigate them.
- recognize the best practices for ensuring client security.

## **Internet Servers and Services**

### **Overview/Description**

To identify the services and protocols that are used to create, administer, and manage the Internet

### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

### **Lesson Objectives**

#### **Internet Servers and Services**

- identify the functions and features of web and e-mail servers.
- identify the characteristics of FTP, TFTP, and Telnet.
- distinguish between different types of Internet servers.
- identify the features and functions of application server providers (ASPs).
- select the most appropriate server in a given scenario.
- recognize the function of host files and domain name system (DNS) servers.
- identify the characteristics of connection and remote access protocols.
- identify protocols used to manage network devices remotely.
- distinguish between different remote access and administrative protocols.

## **Web Development Fundamentals**

### **Overview/Description**

To outline web-page development using HTML and to introduce scripting and database management and connection techniques

### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

### **Lesson Objectives**



- recognize the HTML standards and identify common HTML editors.
- identify the structure and basic elements of an HTML document.

- create a basic web page.
- recognize how to use hyperlinks, tables, and forms in web pages.
- recognize how to use image maps and style sheets in web pages.
- use advanced HTML elements to enhance a web page.
- distinguish between client-side and server-side scripting and list common scripting and programming languages.
- identify some of the advanced markup languages used in web development.
- recognize the function of databases in Internetworking.
- distinguish between different scripting languages and database technologies.

## **Internet Site Development**

### **Overview/Description**

To identify the principles of web-site design and the elements used to create a web site

### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

### **Lesson Objectives**

#### **Internet Site Development**

- recognize how to plan the front-end and back-end elements of a web site.
- identify factors that contribute to effective web design.
- recognize how to perform a site functionality test.
- devise a site development plan and a testing methodology.
- define active content and recognize the function of Java applets and ActiveX controls.
- recognize the function of browser plugins and viewers.
- distinguish between different multimedia file formats.
- select the appropriate multimedia file format for a given scenario.

## **Networking Security Fundamentals**

### **Overview/Description**

To introduce the fundamentals of network security and the potential threats to networks and data

### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

### **Lesson Objectives**

#### **Networking Security Fundamentals**

- identify common security risks for Internet-connected computers.
- recognize how unauthorized access and virus infections can compromise network data.
- recognize how denial-of-service (DoS) attacks operate.
- distinguish between the different threats to wireless network security.
- distinguish between different types of security threats.
- identify the components used to enforce network security.
- identify techniques used to detect network intruders.
- identify the characteristics of common access control methods.
- distinguish between different network-security components and techniques.

## **Securing and Troubleshooting Networks**



### **Overview/Description**

To identify the methods and tools that can be used to secure and troubleshoot network resources

### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

### **Lesson Objectives**

#### **Securing and Troubleshooting Networks**

- identify the characteristics and components of firewalls and proxy servers.
- distinguish between different encryption and decryption techniques.
- configure an antivirus application.
- recognize the components and techniques for protecting network data.
- identify issues that affect Internet site functionality.
- recognize how to identify and solve site-related problems.
- use the appropriate network diagnostic tool in a given scenario.
- identify and resolve Internet-related problems.

#### **Business Concepts and the Internet**

### **Overview/Description**

To identify the applications of e-commerce and their benefits and drawbacks

### **Target Audience**

Students wishing to acquire the fundamental skills required to embark on careers as e-Business IT professionals; students preparing for the CompTIA certification exam IK0-002: i-Net+

### **Lesson Objectives**

#### **Business Concepts and the Internet**

- distinguish between the different e-commerce models.
- identify the infrastructure and standards that facilitate Internet transactions.
- identify the functions and features of electronic payment systems.
- identify the most appropriate e-commerce solution for a given scenario.
- identify the characteristics of common e-marketing methods.
- identify the legal and regulatory concerns for organizations conducting business online.
- identify future trends in e-business.
- identify key marketing and regulatory considerations associated with launching an e-business initiative.

#### **TestPrep 1D0-510 CIW v5 Foundations**

### **Overview/Description**

Generally taken near the end of a program of certification-orientated study, the 1D0-510 CIW v5 Foundations TestPrep enables the learner to test their knowledge in a simulated certification testing environment. Learners can take TestPrep in two different modes: Study and Certification. Study mode is designed to maximize learning by providing feedback, while Certification mode is designed to mimic a certification exam.

### **Target Audience**

Individuals seeking practice in a simulated testing environment, covering the skills and competencies being measured by the actual certification exam.

### **Lesson Objectives**

#### **TestPrep 1D0-510 CIW v5 Foundations**

- Site Development Foundations



- Networking Technology Foundations
- Internet Business Foundations

## **Designer**

### **Design Concepts for Web Sites**

#### **Overview/Description**

To describe, explain, and equip students to use the basic techniques of web site design and development

#### **Target Audience**

Web authors, webmasters, marketing and communications professionals, PR professionals, graphic designers, desktop designers, technical writers, and library scientists

#### **Lesson Objectives**

##### **Design Concepts for Web Sites**

- outline the nature of the Web and the tools and technologies that enable it to function.
- identify and explain common page layout formats and elements and their usage, and explain the importance of white space.
- describe color in numeric formats and use color to convey a company's culture and industrial image.
- choose fonts for a web site and discuss how to control displayed font size.
- discuss the importance of audience usability, identify the elements of a usability test, and conduct a usability test.
- explain why web site navigation is critical, define navigation hierarchies, analyze positional awareness, and describe how browsers control and restrict navigation.
- describe web site structure, apply a navigation action plan, outline familiar conventions, and understand guided navigation.
- discuss digital imaging concepts and graphic types, and how to optimize web images.
- use an online image optimization service.
- describe the basic use of animation, audio, and video for a web site.
- describe what factors to consider when using multimedia as part of a web site.
- describe the collaborative nature of web development.

### **Advanced HTML Design Elements**

#### **Overview/Description**

To describe, and equip students to use, advanced HTML elements such as complex tables, frames and framesets, metadata and the META tag, and style sheets

#### **Target Audience**

Web authors, webmasters, marketing and communications professionals, PR professionals, graphic designers, desktop designers, technical writers, and library scientists

#### **Lesson Objectives**

##### **Advanced HTML Design Elements**

- construct the basic framework of an HTML document, change background colors, set header sizes, and create unordered lists.
- describe the nature of the Web and the tools and technologies that enable it to function.
- use tables to create simple and complex page structures.
- construct a page structure using tables.
- explain how framesets can be used to structure pages.
- construct a page structure using frames.
- explain metadata and use it to influence search engine placement.
- identify the ways in which style variations can be applied with Cascading Style Sheets.
- explain how to create a style sheet in an HTML document and create a link to an external style sheet.
- apply style sheet variations to web pages using three methods.
- use tables, frames, external style sheets, and hyperlinks to build a complex web page.

### **Overview/Description**

To introduce users to the incorporation of JavaScript and other technologies such as DHTML, cookies and plug-ins in web sites, and to web site publishing, web site maintenance, and database integration

### **Target Audience**

Web authors, webmasters, marketing and communications professionals, PR professionals, graphic designers, desktop designers, technical writers, and library scientists

### **Lesson Objectives**

#### **Advanced Technology Concepts for Web Designers**

- outline the origins and evolution of JavaScript.
- understand the basics of JavaScript and be able to embed JavaScript code in HTML that will communicate with the user as well as detect browser types and act accordingly.
- develop JavaScript code that displays a pop-up window, captures user input, and opens additional browser windows.
- write JavaScript code that detects browser types and redirects users accordingly.
- describe Dynamic HTML, discuss the technologies it includes, and describe the Document Object Model and its relationship to DHTML.
- write browser-specific code for use with Microsoft Internet Explorer and Netscape Navigator.
- develop code that displays different graphical elements in Internet Explorer 5.5 and Navigator 4.75.
- describe the advantages of XML and XHTML and differentiate between them.
- describe how to create an XML document.
- describe Java applets and explain how to embed them in web pages.
- identify various HTTP servers and explain their functions, discuss the use of ports for web servers and server administration, describe server-side technologies used to create dynamic content for web pages, and utilize a CGI-handling form.
- describe what CGIs are and create a form to be handled with CGI.
- describe cookies and how they can be used to enhance a web site visit.
- describe how to choose a plugin and how to add plugin content to a web site.
- understand how databases and database management systems function.
- identify the major Internet governing and standards organizations and be able to explain their roles.

#### **Getting Started with FrontPage 2003**

### **Overview/Description**

To introduce the basic features and functionality of Microsoft FrontPage 2003

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Getting Started with FrontPage 2003**

- distinguish between the main interface features of FrontPage 2003 and their functions.
- create a web site using FrontPage 2003's web site templates and wizards.
- distinguish between the different views provided by FrontPage 2003 and their functions.
- create a web site using a web site template.
- develop a web page in FrontPage 2003.
- edit and save web pages in FrontPage 2003.
- develop a web page using FrontPage 2003.



## **Working with graphics, hyperlinks and tables in FrontPage 2003**

### **Overview/Description**

To describe how to add graphics, hyperlinks and tables to web pages using FrontPage 2003

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Working with graphics, hyperlinks and tables in FrontPage 2003**

- add images to a web page in FrontPage 2003.
- format web page graphics in FrontPage 2003.
- add graphics to a web page using FrontPage 2003.
- create hyperlinks in FrontPage 2003.
- add hyperlinks to a web site in FrontPage 2003.
- create tables in FrontPage 2003.
- modify the format and content of tables in FrontPage 2003.
- work with header cells, captions, and layout tables in FrontPage 2003
- create a table in FrontPage 2003.

## **Working with Web Sites in FrontPage 2003**

### **Overview/Description**

To demonstrate how to apply themes and styles, and work with shared borders in FrontPage 2003

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Working with Web Sites in FrontPage 2003**

- use themes in FrontPage 2003.
- apply themes to a FrontPage 2003 web site.
- recognize how to use styles in FrontPage 2003.
- create an external style sheet in FrontPage 2003 and apply it to a web site.
- apply an external style sheet to a web site.
- create shared borders in FrontPage 2003.
- create and edit a shared border in a FrontPage 2003 web site.

## **Organizing Content Using Templates and Frames in FrontPage 2003**

### **Overview/Description**

To provide an overview of how to organize content in FrontPage 2003 using Dynamic Web Templates and frames

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Organizing Content Using Templates and Frames in FrontPage 2003**

- create and save Dynamic Web Templates in FrontPage 2003.
- maintain a Dynamic Web Template and its attached pages.



- create a Dynamic Web Template.
- use frames on a FrontPage 2003 web site.
- create a frames page in FrontPage 2003.
- modify frames in FrontPage 2003.
- modify a frames page in FrontPage 2003.

## **Structuring and Publishing Web Sites in FrontPage 2003**

### **Overview/Description**

To describe how to structure and publish FrontPage 2003 web sites

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Structuring and Publishing Web Sites in FrontPage 2003**

- add link bars to web pages in FrontPage 2003.
- add a link bar to a FrontPage 2003 web page.
- add a table of contents to a FrontPage 2003 web site.
- add a category-based table of contents to a FrontPage 2003 web site.
- publish a web site in FrontPage 2003.
- manage the publication of a web site in FrontPage 2003.
- publish a web site in FrontPage 2003.

## **Working with Code in FrontPage 2003**

### **Overview/Description**

To demonstrate how to work with code in FrontPage 2003

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 at an advanced level or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Working with Code in FrontPage 2003**

- identify the basic elements of HTML.
- modify basic HTML in FrontPage 2003.
- customize the appearance of HTML in FrontPage 2003.
- modify HTML code in a FrontPage 2003 web page.
- use advanced HTML coding features in FrontPage 2003.
- recognize how to use dynamic HTML scripting and XML in FrontPage 2003.
- use advanced coding to modify a FrontPage 2003 web site.

## **Importing and Working with Data in FrontPage 2003**

### **Overview/Description**

To explain how to import web sites, create forms, and work with databases using FrontPage 2003

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 at an advanced level or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Importing and Working with Data in FrontPage 2003**



- create forms in FrontPage 2003.
- work with form controls in FrontPage 2003.
- process forms in FrontPage 2003.
- create a user form for a FrontPage 2003 web site.
- create a form in FrontPage 2003.
- connect to and save form data in a database using FrontPage 2003.
- save form data to a database using FrontPage 2003.
- use the Database Results Wizard to display database data in FrontPage web sites.
- use the Database Interface Wizard to display and edit database data in FrontPage web sites.
- use the Database Interface Wizard to add database interface pages to a FrontPage web site.
- recognize how to import a web site into a new site in FrontPage 2003.
- recognize how to import web sites, files, and folders into existing sites and subsites in FrontPage 2003.
- use the Import Web Site Wizard to import an existing web site into a FrontPage 2003 web site.

## **Enhancing Web Sites with Advanced FrontPage 2003 Features**

### **Overview/Description**

To enhance web sites with dynamic components using FrontPage 2003

### **Target Audience**

Anyone wishing to become familiar with FrontPage 2003 at an advanced level or needing to create professional-standard Internet or intranet sites quickly and easily

### **Lesson Objectives**

#### **Enhancing Web Sites with Advanced FrontPage 2003 Features**

- recognize how to add dynamic components to a FrontPage 2003 web site.
- recognize how to add web components in FrontPage 2003.
- add search functionality and top 10 lists to web pages in FrontPage 2003.
- add dynamic components to a FrontPage web page.
- recognize how to add advanced controls to FrontPage 2003 web pages.
- use advanced controls on FrontPage 2003 web pages.
- recognize how to use layout tools to design FrontPage 2003 web pages.
- recognize how to use layers to design FrontPage 2003 web pages.
- create a layout table and cells for a FrontPage 2003 web page.

## **Setting up a Site and Adding Content in Dreamweaver MX 2004**

### **Overview/Description**

To explain how to set up and add content to a web site in Dreamweaver MX 2004

### **Target Audience**

Web professionals; end users and home users wishing to create effective Internet or intranet sites quickly and easily; Macromedia Flash MX 2004 developers using Macromedia Dreamweaver® MX 2004 to create web pages; individuals wishing to obtain the Dreamweaver® MX 2004 Developer certification

### **Lesson Objectives**

#### **Setting up a Site and Adding Content in Dreamweaver MX 2004**

- open Dreamweaver MX 2004 and manipulate the workspace layout options.
- identify the functions and features of the Dreamweaver MX 2004 interface elements.
- define a local site and use the Files panel in Dreamweaver MX 2004.
- create a new document in Dreamweaver MX 2004.
- set document preferences and properties.
- import data to web pages from .txt files and Microsoft Office files.
- create a document and add content to it in Dreamweaver MX 2004.
- use the Properties inspector to change the format, font, style, size, and alignment of text.
- add lists and characters to enhance page layout in Dreamweaver MX 2004.



- organize and format a document in Dreamweaver MX 2004.

## **Adding Links, Images, and Flash Objects in Dreamweaver MX 2004**

### **Overview/Description**

To identify how to enhance a web site using links, images, and Flash objects in Dreamweaver MX 2004

### **Target Audience**

Web professionals; end users and home users wishing to create effective Internet or intranet sites quickly and easily; Macromedia Flash MX 2004 developers using Macromedia Dreamweaver® MX 2004 to create web pages; individuals wishing to obtain the Dreamweaver® MX 2004 Developer certification

### **Lesson Objectives**

## **Adding Links, Images, and Flash Objects in Dreamweaver MX 2004**

- add links to a page using Dreamweaver MX 2004.
- create named anchors and e-mail links in Dreamweaver MX 2004.
- create hyperlinks, named anchors, and e-mail links.
- add accessible images to a site.
- describe how to manage site assets in Dreamweaver MX 2004.
- modify image properties in Dreamweaver MX 2004.
- add and modify an image in Dreamweaver MX 2004.
- add Flash objects to pages in Dreamweaver MX 2004.
- add and modify the image viewer Flash element in Dreamweaver MX 2004.
- create a Flash button, add a Flash movie to a web page, and modify an image viewer in Dreamweaver MX 2004.

## **Adding Tables in Dreamweaver MX 2004**

### **Overview/Description**

To identify how to structure a web page using tables in Dreamweaver MX 2004

### **Target Audience**

Web professionals; end users and home users wishing to create effective Internet or intranet sites quickly and easily; Macromedia Flash MX 2004 developers using Macromedia Dreamweaver® MX 2004 to create web pages; individuals wishing to obtain the Dreamweaver® MX 2004 Developer certification

### **Lesson Objectives**

## **Adding Tables in Dreamweaver MX 2004**

- describe how to create tables and add content to them in Dreamweaver MX 2004.
- organize and import tabular data in Dreamweaver MX 2004.
- create a table in Layout mode and use a tracing image.
- create and modify tables in Dreamweaver MX 2004.

## **Reusing Content in Dreamweaver MX 2004**

### **Overview/Description**

To identify the features of the site library, templates, and frames in Dreamweaver MX 2004

### **Target Audience**

Web professionals; end users and home users wishing to create effective Internet or intranet sites quickly and easily; Macromedia



Flash MX 2004 developers using Macromedia Dreamweaver® MX 2004 to create web pages; individuals wishing to obtain the Dreamweaver® MX 2004 Developer certification

## Lesson Objectives

### Reusing Content in Dreamweaver MX 2004

- work with site templates in Dreamweaver MX 2004.
- create and modify site library items in Dreamweaver MX 2004.
- create and use templates and library items in Dreamweaver MX 2004.
- create and save framesets in Dreamweaver MX 2004.
- add content to frames within a frameset and modify properties using the Properties inspector.
- create links and noframes content in Dreamweaver MX 2004.
- create and modify frames and framesets in Dreamweaver MX 2004.
- describe how to reuse content with server-side include files.

### Creating Interactive Web Pages in Dreamweaver MX 2004

#### Overview/Description

To identify how to add interactivity to web pages using Dreamweaver MX 2004

#### Target Audience

Web professionals; end users and home users wishing to create effective Internet or intranet sites quickly and easily; Macromedia Flash MX 2004 developers using Macromedia Dreamweaver® MX 2004 to create web pages; individuals wishing to obtain the Dreamweaver® MX 2004 Developer certification

## Lesson Objectives

### Creating Interactive Web Pages in Dreamweaver MX 2004

- create a form and add text objects to it in Dreamweaver MX 2004.
- add checkboxes and buttons to a form in Dreamweaver MX 2004.
- process form data in Dreamweaver MX 2004.
- build a form in Dreamweaver MX 2004.
- create and edit behaviors using the Behaviors panel.
- create rollovers in Dreamweaver MX 2004.
- add button rollover and browser window behaviors in Dreamweaver MX 2004.
- add and edit jump menus using Dreamweaver MX 2004.
- use layers in Dreamweaver MX 2004.
- create a layer and hide it using the Layers panel.

### Working with Cascading Style Sheets in Dreamweaver MX 2004

#### Overview/Description

To identify how to create and work with cascading style sheets in Dreamweaver MX 2004

#### Target Audience

Web professionals; end users and home users wishing to create effective Internet or intranet sites quickly and easily; Macromedia Flash MX 2004 developers using Macromedia Dreamweaver® MX 2004 to create web pages; individuals wishing to obtain the Dreamweaver® MX 2004 Developer certification

## Lesson Objectives

### Working with Cascading Style Sheets in Dreamweaver MX 2004

- recognize the features and benefits of Cascading Style Sheets.
- create Cascading Style Sheets in Dreamweaver MX 2004.
- create, add, and remove class styles in Dreamweaver MX 2004.
- create selector styles in Dreamweaver MX 2004.



- create and apply a style sheet in Dreamweaver MX 2004.
- add external and embedded styles and recognize the cascading order and inheritance of styles.
- edit style sheets in Dreamweaver MX 2004.
- export, attach, and edit a style sheet in Dreamweaver MX 2004.

## **Site Testing and Maintenance in Dreamweaver MX 2004**

### **Overview/Description**

To identify the testing and remote connection features in Dreamweaver MX 2004

### **Target Audience**

Web professionals; end users and home users wishing to create effective Internet or intranet sites quickly and easily; Macromedia Flash MX 2004 developers using Macromedia Dreamweaver® MX 2004 to create web pages; individuals wishing to obtain the Dreamweaver® MX 2004 Developer certification

### **Lesson Objectives**

#### **Site Testing and Maintenance in Dreamweaver MX 2004**

- use tools to test a web site in Dreamweaver MX 2004.
- manage and maintain files in Dreamweaver MX 2004.
- test a web site for browser compatibility and broken links.
- connect and upload to remote sites in Dreamweaver MX 2004.
- create a site map and upload to and synchronize with a remote site.
- use the Find and Replace feature in Dreamweaver MX 2004 to search through text and tags.

## **Working with Images in Macromedia Fireworks MX**

### **Overview/Description**

To discuss how to work with images in Fireworks MX

### **Target Audience**

Web designers; graphic designers; home users and end users with an interest in graphic design; Macromedia Dreamweaver MX users and Macromedia Flash MX developers using Macromedia Fireworks MX to create graphics

### **Lesson Objectives**

#### **Working with Images in Macromedia Fireworks MX**

- discuss the capabilities and navigation features of the Fireworks MX interface.
- open an existing document in Fireworks MX and navigate the Fireworks MX interface.
- explain how to create a new document in Fireworks MX.
- describe how use selection tools and modify bitmap images in Fireworks MX.
- create and edit bitmap graphics in Fireworks MX.
- describe how to create layers and work with vector objects in Fireworks MX.
- explain how to use freeform vector tools and layers in Fireworks MX.
- show how to combine simple paths into complex objects in Fireworks MX using the Union, Intersect, Punch, and Crop commands.
- combine vector paths in Fireworks MX.
- explain how to use stroke and fill options when editing or creating an image in Fireworks MX.
- describe how to create and apply effects, styles, and blending to a Fireworks MX document.
- outline how to create and use masks effectively in Fireworks MX.
- create a mask in Fireworks MX.

## **Using Fireworks MX with Dreamweaver MX and Flash MX**

### **Overview/Description**

To introduce the advantages and possibilities associated with using Fireworks MX with Dreamweaver MX and Flash MX



#### **Target Audience**

Web designers; graphic designers; home users and end users with an interest in graphic design; Macromedia Dreamweaver MX users and Macromedia Flash MX developers using Macromedia Fireworks MX to create graphics

#### **Lesson Objectives**

##### **Using Fireworks MX with Dreamweaver MX and Flash MX**

- show how to optimize graphics in Fireworks MX.
- outline how to export graphics from Fireworks MX.
- describe how to import a graphic to Dreamweaver MX from Fireworks MX.
- optimize and export a Fireworks MX graphic.
- explain how Fireworks MX integrates with Flash MX.
- edit a Fireworks MX graphic from Flash MX.

#### **Introduction to Creating Graphics in Flash MX 2004**

##### **Overview/Description**

To introduce creating graphics in Flash MX 2004

##### **Target Audience**

Web professionals; graphic designers; end users and home users wishing to create interactive Internet or intranet sites; Macromedia Dreamweaver(TM) MX 2004 designers using Macromedia Flash MX 2004 to add animation to web pages

#### **Lesson Objectives**

##### **Introduction to Creating Graphics in Flash MX 2004**

- identify the features of Flash MX 2004.
- navigate the Flash MX 2004 interface.
- use the timeline and layers in Flash MX 2004.
- recognize how to plan a project in Flash MX 2004.
- work with the Timeline and layers in Flash MX 2004.
- work with the design panels in Flash MX 2004.
- use the appropriate drawing tools for a given situation.
- work with images in Flash MX 2004.
- work with bitmaps and vectors in Flash MX 2004.
- create images in Flash MX 2004.
- recognize how symbols, instances, and libraries are organized in Flash MX 2004.
- use symbols in Flash MX 2004.
- work with symbols in Flash MX 2004.

#### **Using Text in Flash MX 2004**

##### **Overview/Description**

To demonstrate how to use text and to give an overview of components and form building in Flash MX 2004

##### **Target Audience**

Web professionals; graphic designers; end users and home users wishing to create interactive Internet or intranet sites; Macromedia Dreamweaver(TM) MX 2004 designers using Macromedia Flash MX 2004 to add animation to web pages

#### **Lesson Objectives**

##### **Using Text in Flash MX 2004**

- use the Text Tool and text properties in Flash MX 2004.
- use text in Flash MX 2004 images.
- work with text in Flash MX 2004.



- use fonts in Flash MX 2004.
- use static and editable text fields in Flash MX 2004.
- insert and format a dynamic text field in Flash MX 2004.
- use components in Flash MX 2004.
- build a form in Flash MX 2004 using components.

## **Animation, Sound, and Video in Flash MX 2004 Movies**

### **Overview/Description**

To demonstrate how to create animations, use sound, and embed video in Flash MX 2004

### **Target Audience**

Web professionals; graphic designers; end users and home users wishing to create interactive Internet or intranet sites; Macromedia Dreamweaver(TM) MX 2004 designers using Macromedia Flash MX 2004 to add animation to web pages

### **Lesson Objectives**

#### **Animation, Sound, and Video in Flash MX 2004 Movies**

- create frame-by-frame animation in Flash MX 2004.
- create and manipulate a motion tween in Flash MX 2004.
- use shape tweening and shape hints in Flash MX 2004.
- add a motion tween and guide using Flash MX 2004.
- create and modify masks in Flash MX 2004.
- create an animated mask effect in Flash MX 2004.
- use sound in Flash MX 2004.
- add sound to a Flash MX 2004 movie.
- embed video in a Flash MX 2004 movie.
- incorporate video in a Flash MX 2004 movie.

## **Introduction to ActionScript in Flash MX 2004**

### **Overview/Description**

To introduce the use of ActionScript in Flash MX 2004

### **Target Audience**

Web professionals; graphic designers; end users and home users wishing to create interactive Internet or intranet sites; Macromedia Dreamweaver(TM) MX 2004 designers using Macromedia Flash MX 2004 to add animation to web pages

### **Lesson Objectives**

#### **Introduction to ActionScript in Flash MX 2004**

- add behaviors and actions using ActionScript in Flash MX 2004.
- recognize ActionScript syntax and terminology used in Flash MX 2004.
- use common actions in Flash MX 2004.
- use frame and button actions in Flash MX 2004.
- add an action to a button and link to a URL in Flash MX 2004.
- add the loadMovie method in Flash MX 2004.
- share library assets in Flash MX 2004.
- work with templates in Flash MX 2004.
- re-use assets in Flash MX 2004.

## **Navigation and Movie Publishing Flash MX 2004**

### **Overview/Description**

To give an overview of how to set up navigation and test and publish movies in Flash MX 2004



#### **Target Audience**

Web professionals; graphic designers; end users and home users wishing to create interactive Internet or intranet sites; Macromedia Dreamweaver(TM) MX 2004 designers using Macromedia Flash MX 2004 to add animation to web pages

#### **Lesson Objectives**

##### **Navigation and Movie Publishing Flash MX 2004**

- create the basics of a navigation system in Flash MX 2004.
- use ActionScript to add submenus to a navigation system in Flash MX 2004.
- divide a site into multiple SWF files in Flash MX 2004.
- create a navigation system in Flash MX 2004 for a given scenario.
- test and publish a Flash MX 2004 movie.
- test and publish a Flash MX 2004 movie in a given scenario.
- combine Flash MX 2004 movies with HTML.
- integrate Flash MX 2004 into an HTML page in a given scenario.

#### **TestPrep 502 Macromedia Flash MX 2004 Designer**

##### **Overview/Description**

Generally taken near the end of a program of certification-orientated study, the 502 Macromedia Flash MX 2004 Designer TestPrep enables the learner to test their knowledge in a simulated certification testing environment. Learners can take TestPrep in two different modes: Study and Certification. Study mode is designed to maximize learning by providing feedback, while Certification mode is designed to mimic a certification exam.

##### **Target Audience**

Individuals seeking practice in a simulated testing environment, covering the skills and competencies being measured by the actual certification exam.

#### **Lesson Objectives**

##### **TestPrep 502 Macromedia Flash MX 2004 Designer**

- Planning
- Visual Design
- Experience Design
- Optimization, Publishing and Workflow

## **ColdFusion MX Developer**

### **Working with Complex Data in ColdFusion MX**

#### **Overview/Description**

To describe how to work with queries, arrays, and structures in ColdFusion MX

#### **Target Audience**

Existing ColdFusion 5 users wishing to gain experience in advanced ColdFusion MX development; web and enterprise application developers who have had an introduction to ColdFusion development and wish to learn advanced development techniques

#### **Lesson Objectives**

##### **Working with Complex Data in ColdFusion MX**



- display, group, and summarize queries in ColdFusion MX.
- query a query and use transactions and query caching in ColdFusion MX.
- use advanced query features in ColdFusion MX.
- create structures and describe how they can be used in ColdFusion MX.
- create structures and describe how they can be used in ColdFusion MX.
- use structures and the Evaluate() function to dynamically evaluate ColdFusion MX variables.
- create and use structures in ColdFusion MX.
- create and manipulate lists in ColdFusion MX.
- create and work with arrays in ColdFusion MX.
- create complex data structures by combining arrays, structures, and queries.
- access data by value or reference and copy queries, arrays, and structures.
- create and use an array of structures in ColdFusion MX.

## Working with Persistent Data in ColdFusion MX

### Overview/Description

To demonstrate how to use ColdFusion MX to maintain persistent data in web applications

### Target Audience

Existing ColdFusion 5 users wishing to gain experience in advanced ColdFusion MX development; web and enterprise application developers who have had an introduction to ColdFusion development and wish to learn advanced development techniques

### Lesson Objectives

#### Working with Persistent Data in ColdFusion MX

- describe persistent variables and use application variables in ColdFusion MX.
- lock and work with shared scope variables in ColdFusion MX.
- create and use cookies in a ColdFusion MX application.
- describe how to enable, create, and use session variables in ColdFusion MX.
- enable, create, and use client variables in ColdFusion MX.
- explain how Web Distributed Data Exchange (WDDX) works, and use it to serialize and deserialize data in ColdFusion MX.
- work with persistent user data in a ColdFusion MX application.

## Creating Reusable ColdFusion MX Code

### Overview/Description

To describe how to create reusable code elements in ColdFusion MX

### Target Audience

Existing ColdFusion 5 users wishing to gain experience in advanced ColdFusion MX development; web and enterprise application developers who have had an introduction to ColdFusion development and wish to learn advanced development techniques

### Lesson Objectives

#### Creating Reusable ColdFusion MX Code

- create user-defined functions in ColdFusion MX.
- use arguments and variables in ColdFusion MX user-defined functions.
- pass arguments by value and by reference and store user-defined functions in ColdFusion MX.
- create and work with user-defined functions in ColdFusion MX.
- create ColdFusion MX components.
- invoke ColdFusion MX components.
- work with instance-based ColdFusion MX components.
- create and work with ColdFusion MX components.
- describe how custom tags are used in ColdFusion MX.
- create and call custom tags in ColdFusion MX.
- create charts with custom tags in ColdFusion MX.



- work with advanced custom tag features in ColdFusion MX.
- use custom tags to create a chart in ColdFusion MX.

## Enhancing ColdFusion MX Applications

### Overview/Description

To describe how to enhance ColdFusion MX applications by adding error-handling, search, and data-exchange functionalities to them

### Target Audience

Existing ColdFusion 5 users wishing to gain experience in advanced ColdFusion MX development; web and enterprise application developers who have had an introduction to ColdFusion development and wish to learn advanced development techniques

### Lesson Objectives

#### Enhancing ColdFusion MX Applications

- use simple error handling in a ColdFusion MX application.
- use the Try/Catch methodology to handle errors in a ColdFusion MX application.
- describe some strategies for handling errors in ColdFusion MX applications.
- handle database exceptions in a ColdFusion MX application.
- describe how Verity works and use it to index and search documents.
- use Verity to index and search query recordsets in ColdFusion MX.
- describe how ColdFusion MX can be used to exchange Internet data, and use the CFHTTP tag to retrieve data.
- use the CFHTTP tag to retrieve WDDX packets in ColdFusion MX.
- describe how XML works in ColdFusion MX, and use ColdFusion MX to create an XML document.
- create, search, and work with XML document objects in ColdFusion MX.
- publish and consume web services in ColdFusion MX.

## Getting Started with ColdFusion MX

### Overview/Description

To introduce and demonstrate the fundamental concepts, tools, and features of ColdFusion MX

### Target Audience

Web professionals and developers that want to create dynamic web sites using ColdFusion

### Lesson Objectives

#### Getting Started with ColdFusion MX

- describe static and dynamic page publishing, and define ColdFusion features and configurations.
- install and operate ColdFusion MX software, and to describe Integrated Development Environments (IDEs).
- describe CFML basics and use CFML comments.
- create and display variables, and write expressions.
- use ColdFusion's built-in functions.
- use ColdFusion variables and functions to print out information.
- connect to and query a database.
- make database queries.
- display database data in ColdFusion MX.
- display database data in an HTML table.
- build form pages in ColdFusion MX.
- create an order form in ColdFusion MX.
- use conditional programming statements in ColdFusion MX.
- check for form submission on a form action page.
- use the CFINCLUDE tag to reuse code.
- use ColdFusion custom tags and create a ColdFusion mapping.



- use and call user-defined functions in ColdFusion MX, and call ColdFusion components.
- use a custom tag and a user-defined function in ColdFusion MX.

## **Data Retrieval and Manipulation in Macromedia ColdFusion MX**

### **Overview/Description**

To introduce and demonstrate data retrieval and manipulation in ColdFusion MX

### **Target Audience**

Web professionals and developers that want to create dynamic web sites using ColdFusion

### **Lesson Objectives**

#### **Data Retrieval and Manipulation in Macromedia ColdFusion MX**

- describe how to use form data in queries.
- demonstrate how to use text and list searches in ColdFusion MX.
- use form data in queries in ColdFusion MX.
- describe how to build a drill-down interface in ColdFusion MX.
- create a data drill-down in ColdFusion MX.
- insert data into a database in ColdFusion MX.
- build an insert action page in ColdFusion MX.
- update a database in ColdFusion MX.
- describe how to use server-side validation and scripting languages to validate data in ColdFusion MX forms.
- use server-side validation in ColdFusion MX.
- use ColdFusion MX to implement client-side validation.
- describe web statelessness and use the Application.cfm file to enable the ColdFusion MX application framework.
- use the CFLOGIN and CFLOGINUSER tags to create application-based security and log a user out of an application.
- use the GetAuthUser() and IsUserInRole() functions.

## **CIW Security Analyst Specialization**

### **Introduction to Security in Networked Environments**

#### **Overview/Description**

To introduce the student to security concepts and threats to networks and data

#### **Target Audience**

Network administrators, firewall administrators, systems administrators, application developers, and IT security officers

#### **Lesson Objectives**

#### **Introduction to Security in Networked Environments**

- explain the basic concepts of security.
- discuss the principles of information security.
- detail some important elements of security.
- list and explain the recognized industry standards and recommendations that address information and network security.
- describe the elements that comprise a typical security policy in the workplace.
- discuss the responsibilities of users and correct user response to security incidents.
- describe threats to information security and network infrastructure.
- explain how different types of denial-of-service attacks affect a network.
- detail threats that arise specifically from hackers.



- set up and monitor a Telnet session using a protocol analyzer.

## Encryption Technologies

### Overview/Description

To discuss techniques for encrypting information

### Target Audience

Network administrators, firewall administrators, systems administrators, application developers, and IT security officers

### Lesson Objectives

#### Encryption Technologies

- outline the history of encryption and the reasons why encryption is important.
- outline the principles of symmetric encryption.
- explain what a block cipher is and identify the algorithms that use them.
- discuss the fundamentals of asymmetric encryption.
- explain the functionality of hashes and message functions in protecting the integrity of encrypted data.
- describe the processes involved in symmetric and asymmetric encryption.
- outline the different methods of managing encryption keys.
- discuss some practical applications of encryption.
- implement a secure encryption scheme on a computer.
- exchange encrypted e-mails.
- explain the use of certificates for trusted secure public-key implementation.
- describe revocation and nonrepudiation of public-key certificates.
- discuss the X.509 standard for public-key certificates.
- describe public-key infrastructure and Secure Electronic Transactions (SETs).
- outline certificate practices, policies, and paths.

## Firewalls and VPNs

### Overview/Description

To explain how firewalls and VPNs facilitate network security

### Target Audience

Network administrators, firewall administrators, systems administrators, application developers, and IT security officers

### Lesson Objectives

#### Firewalls and VPNs

- discuss the requirement for firewalls and their basic principles.
- explain how a packet filter operates.
- explain the difference between application-level and circuit-level gateways.
- recognize different types of firewall technologies.
- explain where to deploy a firewall in a network.
- list advanced security features associated with modern firewalls.
- implement appropriate firewalls for specified scenarios.
- explain the technologies used to implement VPNs for secure WAN communications.
- detail the features of a VPN solution for secure remote connectivity.
- implement a VPN solution for secure remote access.

## Securing Access to Networks



#### **Overview/Description**

To introduce and discuss authentication systems

#### **Target Audience**

Network administrators, firewall administrators, system administrators, application developers, and IT security officers

#### **Lesson Objectives**

##### **Securing Access to Networks**

- define the principles of authentication and discuss authentication methods.
- outline the use of authentication on local networks and for remote users.
- discuss the operation of Single Sign-On authentication.
- explain the features and operation of Kerberos.
- outline the RADIUS authentication mechanism.
- explain the authentication mechanisms used in PPP.
- determine when and where to use different authentication mechanisms.
- outline the TACACS+ authentication mechanism and compare it to the RADIUS authentication mechanism.

### **Intrusion Detection and Response in Networked Environments**

#### **Overview/Description**

To describe how to detect and respond to network intruders

#### **Target Audience**

Network administrators, firewall administrators, system administrators, application developers, and IT security officers

#### **Lesson Objectives**

##### **Intrusion Detection and Response in Networked Environments**

- identify common targets for attack on a network.
- discuss how to respond to potential combined attacks against a network.
- discuss how to counteract IP-based attacks.
- run a check for suspicious ports on a networked computer.
- discuss the principles of detecting network intruders.
- describe how to distract network intruders and limit the damage they can cause.
- set up a decoy account and monitor both failed and successful login attempts.
- describe the characteristics and features of intrusion detection systems.
- describe the different types of intrusion detection mechanisms.
- discuss the deployment of intrusion detection systems.
- discuss how to respond to and manage computer-related security incidents.
- recognize the functionality and deployment issues of intrusion detection.

### **Security Analysis and Auditing in Networked Environments**

#### **Overview/Description**

To discuss how to collect and utilize information on network intrusion attempts

#### **Target Audience**

Network administrators, firewall administrators, system administrators, application developers, and IT security officers

#### **Lesson Objectives**

##### **Security Analysis and Auditing in Networked Environments**

- describe the importance of risk assessment and auditing to network security.
- discuss footprinting and network discovery tools.
- explain how system scanners work.
- describe how intruders access and take control of network resources.
- describe the importance of auditing file system changes to monitor security breaches.
- explain how to prevent intruders taking control of resources on a network.



- use NetBus to execute applications and capture information.
- detail different security log types and analyze their contents.
- describe how to filter, store, and manage log files.
- discuss audit assessment reports and compliance.
- use tactics to detect unauthorized access to a Linux system.
- enable and utilize a security log file.
- discuss security standards.
- describe how to make improvements to network security based on security audit feedback.
- describe how to assess security requirements based on audit feedback.

## **Operating System and File Security Issues**

### **Overview/Description**

To describe operating system and file security issues

### **Target Audience**

Network administrators, firewall administrators, system administrators, application developers, and IT security officers

### **Lesson Objectives**

#### **Operating System and File Security Issues**

- describe Windows NT and Windows 2000 security issues.
- describe UNIX security issues.
- identify the threats to system security, both intentional and unintentional.
- run a security scan on a networked workstation.
- outline the main components of OS security.
- explain changes that can be made to an OS to make it more secure.
- discuss Windows 2000 Registry security.
- perform tasks to improve the security of the Windows OS.
- describe file system and share security in Windows 2000.
- describe different methods of securing accounts in Windows.
- describe different methods of securing accounts in UNIX.
- discuss the security implications of creating and maintaining groups or users.
- implement auditing and specify password policies in Windows.

## **TestPrep 1D0-470 CIW Security Professional**

### **Overview/Description**

Generally taken near the end of a program of certification-orientated study, the 1D0-470 CIW Security Professional TestPrep enables the learner to test their knowledge in a simulated certification testing environment. Learners can take TestPrep in two different modes: Study and Certification. Study mode is designed to maximize learning by providing feedback, while Certification mode is designed to mimic a certification exam.

### **Target Audience**

Individuals seeking practice in a simulated testing environment, covering the skills and competencies being measured by the actual certification exam.

### **Lesson Objectives**

#### **TestPrep 1D0-470 CIW Security Professional**

- Network Security and Firewalls
- Operating System Security
- Security Auditing, Attacks, and Threat Analysis

## **CIW Enterprise Developer**



## Developing EJBs

### Overview/Description

To describe the Enterprise JavaBean (EJB) component model and to explain how to create EJBs

### Target Audience

Java developers interested in Enterprise JavaBeans and how they can be used to develop enterprise-class applications; business analysts, system architects, technical managers, and technology evaluators interested in gaining an overview of enterprise development technologies

### Lesson Objectives

#### Developing EJBs

- discuss server-side component architectures and software components.
- outline the features of the Enterprise JavaBean (EJB) server-side component model.
- outline the three component types of Enterprise JavaBeans (EJBs).
- describe the services provided to Enterprise JavaBeans (EJBs) by the EJB container.
- provide an overview of the uses and capabilities of session beans.
- define the characteristics of the component and home interfaces of a session bean.
- describe how to create an implementation class, complete with business methods for a session bean.
- create a simple stateful session bean.
- describe the properties of an entity bean, including the life cycle and persistence mechanisms.
- outline the steps involved in creating an entity bean using bean-managed persistence.
- create the remote interface, remote home interface, and bean implementation class for a BMP entity bean.

## Persistence and Transactional Issues Affecting EJBs

### Overview/Description

To describe how to implement container-managed persistence (CMP) for entity beans and to discuss how to use container-managed transactions (CMT) and the Java Transaction API (JTA) to control Enterprise JavaBean (EJB) transactions

### Target Audience

Java developers interested in Enterprise JavaBeans and how they can be used to develop enterprise-class applications; business analysts, system architects, technical managers, and technology evaluators interested in gaining an overview of enterprise development technologies

### Lesson Objectives

#### Persistence and Transactional Issues Affecting EJBs

- discuss the use of container-managed persistence.
- explain how to create a container-managed persistence (CMP) entity bean.
- code a simple container-managed persistence (CMP) entity bean.
- describe how to implement container-managed relationships (CMR) for container-managed persistence (CMP) entity beans.
- describe how dependent value classes can be used with CMP entity beans.
- describe the Enterprise JavaBeans (EJB) transactional model.
- describe container-managed transaction attributes and how to set them in the deployment descriptor.
- describe how to implement bean-managed transactions for enterprise beans.

## Java Database Connectivity

### Overview/Description

To describe database connectivity issues in the context of the J2EE platform and to outline how to use the core and extension JDBC APIs

### Target Audience

Java developers who wish to gain an understanding of J2EE's support technologies, including JDBC, RMI, JMS, JNDI and CORBA;



business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of enterprise development technologies

## Lesson Objectives

### Java Database Connectivity

- describe JDBC concepts and features.
- describe the JDBC architecture.
- describe the issues involved in selecting a JDBC driver to suit a particular application architecture.
- describe the core and extension JDBC API packages.
- describe the methods available to connect to a database using JDBC.
- issue database requests.
- describe how to handle SQL exceptions and warnings when issuing database requests.
- use JDBC to execute statements on a database to insert and update information and to run a query to obtain a result set.
- outline useful techniques for working with result sets.
- outline how to use prepared statements to improve database efficiency.
- describe how to code prepared statements.
- describe how to use stored procedures to increase database performance.
- describe transaction properties and explain how to manage transactions.
- code a transactional update.
- outline how to use the JTA in a distributed transaction system.
- describe the issues involved in using connection pooling to improve database performance.

## RMI and the Java Message Service

### Overview/Description

To introduce distributed technologies and provide an overview of RMI and the Java Message Service (JMS)

### Target Audience

Java developers who wish to gain an understanding of J2EE's support technologies, including JDBC, RMI, JMS, JNDI and CORBA; business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of enterprise development technologies

## Lesson Objectives

### RMI and the Java Message Service

- describe the RMI architecture and the RMI registry.
- explain how to use serialization explicitly to make objects persistent.
- understand how the RMI system sends data across a network.
- provide an overview of the JNDI API.
- discuss RMI server interfaces and describe how to create one.
- describe how to implement a remote interface to create an RMI server object.
- create a simple RMI server.
- outline the steps required to make remote objects available to clients.
- show how to configure an RMI application to enable dynamic class loading.
- explain how to create an RMI client.
- create an RMI client.
- discuss messaging technology concepts and the Java Message Service (JMS).
- describe the main classes in the Java Message Service (JMS) API.
- outline how to create a standalone JMS client.
- explain how the Java Message Service (JMS) API is used in a J2EE application to create a message-driven bean.
- create a simple Java Message Service (JMS) client and discuss types of JMS clients.

## CORBA and the Java IDL

### Overview/Description

To introduce CORBA as a language-independent distribution technology specification and to describe how to use the Java IDL to create Java interfaces for CORBA-compliant systems



### Target Audience

Java developers who wish to gain an understanding of J2EE's support technologies, including JDBC, RMI, JMS, JNDI and CORBA; business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of enterprise development technologies

### Lesson Objectives

#### CORBA and the Java IDL

- discuss distribution technology concepts.
- describe the architecture of a CORBA-compliant system using the OMA reference model and to give an overview of CORBA-related technologies.
- describe the new features of the CORBA 3.0 specification.
- provide an overview of the CORBA IDL.
- describe how to create an IDL file and explain how to use the idlj compiler to compile an IDL file and produce the required Java files.
- describe how to produce an implementation base class to create CORBA server.
- outline the steps required to create a CORBA client.
- create a simple CORBA application.
- describe how remote objects can be accessed dynamically using Dynamic Invocation Interface (DII) and Dynamic Skeleton Interface (DSI).
- describe the relationship between CORBA and Java.
- discuss how to map data types between IDL and Java.
- code an IDL interface that uses complex data structures and operations.
- describe how RMI has been integrated with CORBA using RMI-IIOP and the Java-to-IDL mapping.
- code an RMI interface that is IDL compliant.
- code the implementation classes for an RMI-IIOP client and server.
- code a simple RMI application that runs over IIOP.

### J2EE Architecture

#### Overview/Description

To provide an overview of enterprise application design and development using the J2EE platform and its enabling technologies

#### Target Audience

Java developers who want to familiarize themselves with the J2EE specification and platform; business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of J2EE enterprise application architecture

### Lesson Objectives

#### J2EE Architecture

- describe how the Java language has evolved and you should be able to describe the J2EE framework.
- describe how Sun Microsystems provides industry recognized, foundation and enterprise level Java certification for developers.
- give an overview of enterprise applications and how the J2EE platform facilitates them.
- describe each element of the J2EE.
- identify the components and containers in the J2EE application model.
- describe the core J2EE component technologies.
- describe the underlying services provided by the J2EE platform to support core J2EE components.
- provide an overview of changes to and new features in the J2EE 1.3 specification.
- describe how to use design patterns to facilitate the design of J2EE applications.
- describe the issues involved in designing distributed systems.
- make architectural design decisions for a J2EE enterprise application

## CIW Developer

### Developing Servlets

#### Overview/Description

To outline the relationship between JavaServer Pages (JSPs) and servlets, to describe how to create servlets, and to explain how they fit into the web tier of the J2EE platform



### Target Audience

Java developers who want to achieve an understanding of how web application components are developed for the Java 2 Enterprise Edition (J2EE) platform; business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of Java web-component technologies

### Lesson Objectives

#### Developing Servlets

- describe the role of Java web components and to differentiate between the responsibilities of servlets, JSPs, and EJBs.
- describe the main classes of the servlet API and outline the life cycle of an HTTP servlet.
- describe the steps required to create a basic HTTP servlet.
- create a simple HTTP servlet to verify the logon to a web page.
- configure the deployment descriptor of a servlet and describe the steps necessary to run it on a web server.
- access Enterprise JavaBeans (EJBs) from within servlets.
- use an Enterprise JavaBean (EJB) from within a servlet.
- outline the issues involved in integrating servlets with JavaServer Pages (JSPs).
- make JDBC API calls from a servlet to a database.
- describe how to use servlets to track sessions using HttpSession objects, cookies, and URL rewrites.
- describe how to handle thread safety issues in multithreaded servlets to prevent servlet conflicts.
- describe how filters can be used to manipulate servlet requests and responses.
- code a simple filter and set it up in the deployment descriptor.
- describe how to implement listeners for web application life-cycle events.

### Developing JSPs

#### Overview/Description

To outline the relationship between JavaServer Pages (JSPs) and servlets, to describe how to create JSPs, and to explain how they fit into the web tier of the J2EE platform

#### Target Audience

Java developers who want to achieve an understanding of how web application components are developed for the Java 2 Enterprise Edition (J2EE) platform; business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of Java web-component technologies

### Lesson Objectives

#### Developing JSPs

- give an overview of JavaServer Page (JSP) technology.
- describe JavaServer Page (JSP) expressions, scriptlets, declarations, and implicit objects.
- discuss the three JavaServer Page (JSP) directives – page, include, and taglib.
- use JavaBeans to enhance the functionality of JavaServer Pages (JSPs).
- develop a JavaServer Page (JSP) that uses a JavaBean to perform a currency converter.
- describe how to use custom tags to extend the functionality provided by JavaServer Pages (JSPs).
- develop a JSP custom tag and use this tag in a JSP page.

### Web service technologies

#### Overview/Description

To introduce web services and to provide an overview of the Java technologies that can be used to develop them  including the Java XML Pack, servlets, and JSPs

#### Target Audience

This learning path is primarily aimed at Java developers who want to achieve an understanding of web services technologies and how web services are developed for the Java 2 Enterprise Edition platform. This learning path would also be of interest to business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of Java web services technologies

### Lesson Objectives

- outline the components and functions of web services and identify the ways in which they can benefit organizations.
- outline and distinguish between the core technologies used to develop web services such as SOAP and WSDL.
- identify how XML provides the basis for web service technologies such as SOAP and WSDL.
- define XML schemas and namespaces and identify how they are used in web service technologies.
- define the format of a WSDL file.
- demonstrate how to modify the binding and service settings of WSDL files.
- create settings in a WSDL file.
- define the format of SOAP messages and demonstrate how they can be used for sending errors.
- create a general SOAP message and build a message so that it can be used to send an error.

## Java technologies for web services

### Overview/Description

To outline the components and functions of Java web service technologies

### Target Audience

This learning path is primarily aimed at Java developers who want to achieve an understanding of web services technologies and how web services are developed for the Java 2 Enterprise Edition platform. This learning path would also be of interest to business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of Java web services technologies

### Lesson Objectives

#### Java technologies for web services

- distinguish between the Java technologies that can be used to develop web services on the J2EE platform, including the Java Web Services Developer Pack (WSDP).
- outline the components and functions of the Java API for XML Processing (JAXP) and use it to process an XML file using a SAX parser.
- use the JAXP API to implement a simple SAX parser.
- process an XML file using the Java API for XML Processing (JAXP) and a DOM parser.
- identify how to use the Java API for XML-based RPC (JAX-RPC) and outline the uses of Apache Axis.
- create simple and configurable JAX-RPC web services using Apache Axis.
- identify the components and functions of the Java API for XML Messaging (JAXM) and outline its relationship with other JAX APIs.
- outline the components and functions of the Java API for XML Registries (JAXR).

## Java web service clients

### Overview/Description

To outline how to create web service clients using Java technologies

### Target Audience

This learning path is primarily aimed at Java developers who want to achieve an understanding of web services technologies and how web services are developed for the Java 2 Enterprise Edition platform. This learning path would also be of interest to business analysts, system architects, technical managers, and technology evaluators who are interested in gaining an overview of Java web services technologies

### Lesson Objectives

#### Java web service clients

- create JAX-RPC clients that use static and dynamic web service interfaces.
- create a client that accesses a simple web service dynamically using JAX-RPC.
- create synchronous JAXM web service clients.
- create a simple synchronous JAXM client.
- create asynchronous JAXM web service clients and identify how to add attachments to SOAP messages.