WEB SERVICES DEVELOPMENT FOR IBM WEBSPHERE APPLICATION SERVER V 7.0 COURSE CONTENT

- **SECTION 1 - ARCHITECTURE AND CORE CONCEPTS (13%):**
  - A. Identify suitable opportunities to apply Web services
  - B. Choose the appropriate WSDL style
  - C. Select the appropriate Web service transport
  - D. Explain appropriate encodings and serialization models for Web service messages
  - E. Evaluate performance considerations and trade-offs when implementing Web services
  - F. Select strategies and mechanisms for error handling
  - G. Describe the benefits of a service registry (UDDI, WSRR)

- **SECTION 2 - STANDARDS AND SPECIFICATIONS (15%):**
  - A. Read and interpret the core features of WSDL and SOAP (1.1/1.2)
  - B. Select appropriate Web services features for effective interoperability according to WS-I (Web Services Interoperability)
  - C. Use Web services attachment standards (SOAP with Attachments, MTOM)
  - D. Identify opportunities to use Web services qualities of service (WS-Reliable Messaging, WS-Policy, WS-Addressing, WS-Transaction)

- **SECTION 3 – WEB SERVICES DEVELOPMENT TOOLS (16%):**
  - A. Create Web services using appropriate wizards and command line tools
  - B. Create and edit a WSDL document with the WSDL editor
  - C. Develop a Web service client using appropriate wizards and command line tools
  - D. Effectively test a Web service application using the generated test JSP client and the Web Services Explorer
  - E. Validate WS-I compliance levels
  - F. Test and debug Web services using the TCP/IP Monitor
  - G. Enable HTTP or JMS on an EJB-based Web service

- **SECTION 4 - WEB SERVICES DEVELOPMENT (30%):**
  - A. Use the JAX-WS API including WebSphere-specific enhancements
  - B. Develop managed Web services as defined by JSR109
  - C. Create a top-down Web service from a WSDL document
  - D. Create a bottom-up Web service from a JavaBean or EJB
  - E. Develop a SOAP 1.1 or 1.2-based Web service
  - F. Differentiate between the JAX-WS API and JAX-RPC API
  - G. Customize mappings between Java and WSDL as defined by JAX-WS
  - H. Use the SAAJ API
  - I. Use binary data and/or attachments in Web services
  - J. Develop a Web service client from a WSDL document
  - K. Develop a Web service client in an unmanaged environment
  - L. Explain when to implement a static versus a Dynamic Invocation Interface (DII) client
  - M. Use the JAX-WS asynchronous programming model

- **SECTION 5 - DEVELOPMENT AND CONFIGURATION OF WEB SERVICES (13%):**
  - A. Package Web services using IBM Rational Application Developer V7.5
  - B. Deploy Web services to IBM WebSphere Application Server V7.0
  - C. Understand and modify Web service and client deployment descriptors
  - D. Apply qualities of service to existing Web service endpoints
  - E. Configure policy sets on an existing Web service

F. Import and export policy sets and bindings within IBM WebSphere Application Server V7.0 and IBM Rational Application Developer V7.5
G. Use a service integration bus (SIBus) to expose Web services

❖ **SECTION 6 - SECURITY (13%):**

A. Configure Web services for WS-Security
B. Configure server-side role-based security
C. Use message-level and/or transport-level security for integrity, confidentiality and authentication
D. Explain the value proposition of using WS-SecureConversation
E. Explain the value proposition of using WS-Security Kerberos Token Profile
F. Select appropriate WS-Security features for effective interoperability according to WS-I profiles