



DEPAUL UNIVERSITY

COLLEGE OF COMPUTING AND DIGITAL MEDIA

Institute for Professional Development

Java Web Services Program

A seven-week concentrated program covering service-oriented architectures and the development of Web services using the Java™ programming language

DePaul University's Java Web Services Program is designed to provide programmers with an intensive and comprehensive introduction to all essential aspects of the technologies, techniques, and principles of Web services and their implementation using Sun Microsystems' Java™ language. The program stresses an understanding of the underlying protocols and emerging standards for Web services, the strengths of Java as a development platform for Web services, and the use of Web services to deliver solutions to business problems.

Classroom lectures and demonstrations will be complemented by reading and programming assignments. The software used in this program is all open-source or is freely available for download.

YOU WILL LEARN:

- Service-Oriented Architecture (SOA) concepts and modeling
- XML technologies: XSD, XSLT, XPath, XQuery
- SOAP
- WSDL
- UDDI
- Message-based applications
- Security
- Web services standards: WS-Addressing, WS-ReliableMessaging, WS-Policy, etc.
- Interoperability (WS-I)
- Enterprise Application Integration (EAI)

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JAVA WEB SERVICES PROGRAM

A Web service is an application available over a network using standard protocols and technologies. Hidden in that definition is a revolution: Web services are transforming the development of distributed applications. The World Wide Web transformed document exchange and providing simple services, creating many new business opportunities and forcing all but the smallest businesses to develop a Web presence. Web services are poised to work a similar transformation in providing computation resources. New business models involving Web services are already being provided by companies such as Google and Amazon.

Web service infrastructure includes protocol families such as HTTP and XML. The reliance of Web services on open standards not based on specific programming models frees Web services from the restrictions faced by other technologies for distributed computing, such as CORBA. The message protocol for Web services, SOAP, is well established. Current development in Web services focuses on providing additional capabilities over the minimal protocol to support security, reliable delivery of messages, asynchronous programming models, and policy negotiation.

Web services can be published and discovered within a standards-based distributed architecture, which supports the integration of existing distributed applications into still richer applications. A central ambition of Web service technology is interoperability, so that code modules written in different languages and available on different platforms can interact transparently.

The goal of the Java Web Services Program is to provide software developers with the knowledge and tools to write commercial-grade Web services, taking advantage of the latest standards. The program covers infrastructure technologies such as XML, foundational material such as Service-Oriented Architecture and asynchronous programming patterns, and Web services standards and initiatives.

CURRICULUM

The following topics are covered in the program. Each unit involves reading and programming assignments. The software used in the program is all open-source or freely available for download to the student's own computing environment. It is also available in the Institute's dedicated computer laboratory.

INTRODUCTION/OVERVIEW

Program overview. Directions for download and installation of software used in the program. Web services standards. Web services programming models. Introduction to Service Orientation.

SERVICE-ORIENTED ARCHITECTURE (SOA)

SOA concepts. Implementation frameworks. SOA from a modeling perspective.

XML TECHNOLOGY

XML basics. Basic programming models. XSD. XSLT. XPath. XQuery. DOM/SAX.

SOAP / WSDL / UDDI

Doc-literal vs. Doc-enabled vs. XML-RPC. Web service contracts. Publication and discovery. Programming models.

MESSAGING

Asynchronous programming patterns.

SECURITY

Basic authentication and authorization. Role-based and code access security. Threat modeling. Message validation. Message encryption. Federated identity. Web service security. SAML and Liberty.

WS-*

Emerging Web services standards: WS-Addressing, WS-ReliableMessaging, WS-Policy, etc.

INTEROPERABILITY

Cross-platform Web service interoperability. WS-I.

**ENTERPRISE APPLICATION
INTEGRATION (EAI)**

Re-enabling existing systems.

FUTURE OF WEB SERVICES

The future of Web services in Java.

GENERAL INFORMATION**ADMISSION**

Applicants must have a solid programming background (at least two years of professional software development experience is required) and knowledge of the core Java language. Applicants should also be familiar with basic SQL. A substantial commitment of time is required for this intensive course of study. Final admission will be determined by the admissions committee on the basis of an applicant's overall qualifications, including work history and educational background.

FACILITIES

To promote the learning process, the Institute maintains special-purpose laboratories as well as dedicated classrooms equipped with state-of-the-art audio/visual equipment.

In addition, the college's unique Course OnLine (COL) technology allows students to replay classes over the Internet. COL captures and replays five components of the classroom experience—audio, video, PC screen, whiteboard, and document camera input—and incorporates them into one interface to provide an innovative rebroadcast system.

SCHEDULE

The Institute offers one section of the program each quarter. Classes meet on Monday and Wednesday evenings and in the morning on approximately half of the Saturdays in the program.

FACULTY

The faculty consists of a team of instructors from the College of Computing and Digital Media and experts in industry. Faculty will be available throughout the program both in person and through electronic mail.

COLLEGE OF COMPUTING AND DIGITAL MEDIA

The college, through its School of Computing and its School of Cinema and Interactive Media, offers a variety of programs at the undergraduate and graduate levels. Over 1,000 students are enrolled in the college's bachelor's programs and over 2,000 students are enrolled in the master's and Ph.D. programs making the college's graduate program one of the largest in the country. The college offers more than 200 courses each quarter, many in the evening, in several locations: the Loop Campus, the Lincoln Park Campus, the O'Hare Campus, the Naperville Campus, and the Rolling Meadows Campus. Many of the degree programs are also available exclusively online.

Current offerings at the undergraduate level include:

School of Computing

Computer Games Development
Computer Graphics and Motion Technology
Computer Science
Computing
Information Assurance and Security Engineering
Information Systems
Information Technology
Interactive Media
Math and Computer Science
Network Technology

School of Cinema and Interactive Media

Animation
Computer Games Development
Computer Graphics and Motion Technology
Digital Cinema
Interactive Media

Current offerings at the graduate level include:

School of Computing

Applied Technology
Business Information Technology
Computer Graphics and Motion Technology
Computational Finance
JD/MS in Computer Science Technology
JD/MS in Computer Science Technology
Computer Information and Network Security
E-Commerce Technology
Human-Computer Interaction
Information Systems
Information Technology
Instructional Technology Systems
IT Project Management
Software Engineering
Telecommunications Systems

School of Cinema and Interactive Media

Computer Games Development
Computer Graphics and Motion Technology
Digital Cinema – MS
Digital Cinema – MFA
Human-Computer Interaction

INSTITUTE FOR PROFESSIONAL DEVELOPMENT

The Institute for Professional Development was formed by the college in 1984 to assist both individuals and businesses in keeping pace with the rapid development of computer technologies. The Institute currently offers a variety of intensive certificate programs in these areas:

- Advanced SQL
- IT Project Management
- Java™ Developer
- Java™ EE Developer (formerly J2EE Developer)
- Java™ Web Services
- Lightweight Java™ Web Development
- .NET Developer
- Ruby on Rails®
- SharePoint® Developer
- SQL Server® Business Intelligence
- SQL Server® Database Administration
- Web Development with Python®

APPLICATION PROCEDURE:

Complete the enclosed application and return it with a non-refundable \$40.00 application fee (check or money order made payable to DEPAUL UNIVERSITY) to:

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