



DEPAUL UNIVERSITY

COLLEGE OF COMPUTING AND DIGITAL MEDIA

Institute for Professional Development

.NET DEVELOPER PROGRAM

A ten-week comprehensive program covering Microsoft® .NET technologies

DePaul University's .NET Developer Program is designed to provide programmers with an intensive and comprehensive introduction to all essential aspects of the technologies, techniques and principles of Microsoft .NET. The program stresses an understanding of the relevant technologies, an understanding of the most common products, and the use of the Web as a platform to deliver solutions to business problems.

Classroom lectures and demonstrations will be complemented by reading and programming assignments. The student will be provided with the .NET Framework, Visual Studio®, and supporting tools enabling the student to develop and test applications.

YOU WILL LEARN:

- .NET Framework
- Common Language Runtime (CLR)
- Common Language Specification (CLS)
- Common Type System (CTS)
- Memory management
- Assemblies
- Visual Studio
- C# language
- VB.NET language
- Structured exception handling
- ADO.NET
- .NET remoting
- XML support
- Windows Forms
- WPF
- Versioning and Global Assembly Cache (GAC)
- Threading models
- ASP.NET
- Web Forms
- SOAP-based Web Services
- WCF
- .NET security

DePaul University
College of Computing and Digital Media
Institute for Professional Development
243 S. Wabash Avenue, Room 301
Chicago, IL 60604-2300
(312)362-6282
ipd.cdm.depaul.edu

.NET DEVELOPER PROGRAM

.NET is Microsoft's most ambitious and by far its most complex, comprehensive and inclusive technology initiative. It reflects the recognition that the Internet and its standards will play a dominant role in the software development of the future. It also reflects the fact that object-oriented programming has become the norm. Instead of relying solely on Visual Basic®, the Visual Studio development environment gives the user the choice of using C#, Visual Basic or any of the twenty languages supported by .NET, including COBOL, Perl, Python® and even Java™. There is no question that .NET is a formidable response to the challenge of Java and Sun™'s J2EE™ initiative.

Most notable about the .NET platform is its comprehensiveness. Over the base .NET runtime, .NET layers application libraries encompassing database access, network programming, conventional desktop user interfaces, XML processing, Web development, and much more. New programming initiatives such as the Windows Presentation Foundation, Windows Communication Foundation and WorkFlow are all built on top of the .NET Framework. .NET is the present and future of software development in the Microsoft environment.

The goal of the .NET Developer Program is to give the programmer an excellent understanding of the entire sweep of the .NET initiative, the tools and knowledge to develop a wide range of .NET applications with special emphasis on Web applications, and also knowledge of likely future directions. The principal language that will be used in the program is C#.

Students in the .NET Developer Program are expected to do a considerable amount of work outside of class. The software provided enables the student to maximize learning opportunities. Instructors will be accessible in person and through electronic mail. The participant must have a solid programming background (at least two years of professional software development experience is required), including experience with Windows®-based or object-oriented programming, and a basic knowledge of HTML and databases.

CURRICULUM

The following topics are covered in the program. Each unit involves reading assignments. All work can be done using the software provided; some of the work can also be done using the Institute's dedicated laboratories.

YOUR LEARNING ENVIRONMENT

Introduction to .NET. Tools and software distributed to the students.

.NET FRAMEWORK

Common Language Runtime. Common Language Specification. Visual Studio. .NET Languages. Assemblies. Metadata. Manifests. Managed execution. Applications. Versioning.

COMMON LANGUAGE RUNTIME

JIT compilation. Common Type System. Managed code. Runtime models.

BASE CLASSES

Component model. Configuration data. Directory services. Messaging. Process management. Timers. Networking. Collections. Regular expressions. Threading. Reflection. Drawing.

OBJECT-ORIENTED PROGRAMMING

Classes. Applications. Methods. Data members. Namespaces. Constructors. Inheritance. Casting. Interfaces. Polymorphism. Overriding methods and properties. Shared members. Referencing. Garbage collection.

C# and VB.NET

C# program structure. C# syntax. Type system. Classes. Component development. Properties. Delegates. Events. Attributes. Unsafe code. User-defined collections. Reflection. Visualization.

.NET REMOTING

Remoting architecture. Channels. Proxies. Configuration files.

.NET SECURITY

Evidence and role-based security models. Code Access Security. Security configuration.

**DEPLOYING AND VERSIONING
.NET APPLICATIONS**

Assembly manifests. Assembly structure. Strong naming. Private assemblies. Shared assemblies. Global Assembly Cache. Version policies. Packaging and distribution.

**WINDOWS FORMS
AND CONTROLS**

Creating Windows Forms. Windows Forms inheritance. Event handling. Survey of available controls. Menus. Status bars. Dialog boxes. MDI applications. Data binding. Windows control development. Developing databound controls. Multi-threaded controls. GDI+.

WPF

XAML. Project files. Controls. Dependency properties. Routed events. Styles, Skins and Themes. Data binding. Triggers. Resources. Graphics and animation. Custom controls.

.NET EVENTS

Defining events. Firing an event. Defining an event handler. Subscribing to events. Delegation.

WINDOWS SERVICES

Service application architecture. Writing Windows Services. Debugging Windows Services.

ADO.NET

Connected mode vs. disconnected mode. Data sets. Data tables. Data readers. Data adaptors. Transactions. Concurrency. Data binding for rich-client applications. Data sources.

XML.NET

XML basics. XMLReader. XMLWriter. XmlNodeWriter. XMLNavigator. XMLDataDocument. XML and ADO.NET.

WEB BASICS

Review of HTTP. HTTPRequest/HTTPResponse. Caching.

ASP.NET

Web controls. Control-based, event-driven execution. Data binding. Templates. Configuration files. Themes. Session, Cache, and Application Indexers.

WEB SERVICES

SOAP-based and REST-style Web Services. WSDL documents. UDDI.

GENERAL INFORMATION**ADMISSION**

Applicants must have a solid programming background (at least two years of professional software development experience is required), including experience with Windows-based or object-oriented programming, and a basic knowledge of HTML and databases.

A substantial commitment of time is required for this intensive course of study. Acceptance into the program 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.

CLASSES

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

FACULTY

The faculty consists of a team of instructors from the College of Computing and Digital Media and experts from 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 Games Development
Computer Graphics and Motion Technology
Computational Finance
JD/MA 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™
- 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:

DePaul University
.NET Developer Program
Institute for Professional Development
243 S. Wabash Avenue, Room 301
Chicago, IL 60604-2300