MODERN .NET WEB DEVELOPMENT PROGRAM

A ten-week comprehensive program covering web development using the latest Microsoft® .NET technologies

DePaul University's Modern .NET Web Development 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 web development. 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 in both on-premises and cloud-based hosting environments. Topics include Visual Studio 2022 and .NET 5+. Common Language Runtime (CLR); C# language; ASP.NET (MVC and WebAPI); ADO.NET, LINQ, and Entity Framework; assemblies; memory management; jQuery; Bootstrap; AngularJS; Restful Web Services; .NET security; caching; and, threading models.

Classroom lectures and demonstrations will be complemented by reading and programming assignments. The student will be provided with the .NET runtimes, Visual Studio 2022, and supporting tools enabling the student to develop and test applications.

YOU WILL BE ABLE TO:

- Explain primary .NET architecture components (CLR, CTS, BCL)
- Understand the .NET ecosystem, including the full runtime and .NET Core implementations
- Gain competence in building scalable web applications
- Gain competence in writing applications using ASP.NET MVC framework
- Use Entity Framework ORM with SQL Server
- Explore modern authentication/authorization methods with the Microsoft ASP.NET Identity Framework
- Explore Windows Azure and how to build applications that leverage modern cloud-based infrastructure
- Explore Single Page Architectures using WebAPI and AngularJS
MODERN .NET WEB DEVELOPMENT PROGRAM

.NET is a modern, open-source platform designed to build a variety of high-performance applications on Windows, Mac, and Linux. Microsoft provides development tools for all types of developers. Visual Studio for Windows and Mac allows for the development of applications on a variety of platforms while Visual Studio Code allows any developer to build web applications. The Visual Studio development environment gives the user the choice of using C#, Visual Basic, or any of the many languages supported by .NET such as F# and Python, to name a few.

The goal of the Modern.NET Web Development Program is to give the programmer an excellent understanding of the entire sweep of the .NET initiative, the tools and knowledge to develop modern Web applications, and also an exploration of likely future directions. The principal language that will be used in the program is C#.

Students in the Modern .NET Web Development 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); some experience with web application frameworks is recommended, along with a basic knowledge of HTML, CSS, and databases.

**CURRICULUM**

The following topics are covered in the program. Each unit involves reading and/or assignments. All coursework can be done using the software provided.

<table>
<thead>
<tr>
<th>YOUR LEARNING ENVIRONMENT</th>
<th>Introduction to .NET. Tools and software distributed to students.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLOUD SERVICES</td>
<td>Microsoft Azure. Hosting, patterns, deployment, lifecycle.</td>
</tr>
<tr>
<td>ADO.NET</td>
<td>Entity Framework, Connected Mode, Transactions, Concurrency</td>
</tr>
</tbody>
</table>
GENERAL INFORMATION

ADMISSION
Applicants must have a solid programming background (at least two years of professional software development experience is required); some experience with web application frameworks is recommended, along with a basic knowledge of HTML, CSS, 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 college maintains special-purpose laboratories as well as dedicated classrooms equipped with state-of-the-art audio/visual equipment.

In addition, the college’s Course OnLine (COL) system records classroom lectures that take place on campus, allowing students to replay lectures online. COL captures all classroom elements from audio and video to whiteboard notes and the instructor’s supplemental materials. This system gives students the flexibility to review class content or watch a lecture they may have missed.

CLASSES
The Institute offers one section of the program each quarter. Classes meet one evening per week and in the morning on approximately half of the Saturdays during the program. The option to take the program entirely online is also available.

FACULTY
The faculty consists of a team of instructors from the Jarvis College of Computing and Digital Media and experts from industry. Faculty are available throughout the program both in person (for classes that meet on campus) and through e-mail.
The college, through its School of Cinematic Arts, School of Computing, and its School of Design, offers a variety of programs at the undergraduate and graduate levels. More than 3,500 students are enrolled in the college’s bachelor’s programs and more than 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 400 courses each quarter, many in the evening, and primarily in the Loop and Lincoln Park Campuses. Most of the degree programs are also available exclusively online.

**Undergraduate programs include:**
- Animation B.A. / B.F.A.
- Computer Science B.S.
- Computing B.A.
- Cyber-Physical Systems Engineering B.S.
- Cybersecurity B.S.
- Data Science B.S.
- Film and Television B.A. / B.F.A.
- Game Design B.S.
- Game Programming B.S.
- Graphic Design B.F.A.
- Industrial Design B.F.A.
- Information Systems B.S.
- Information Technology B.S.
- Math and Computer Science B.S.
- Network Engineering and Security B.S.
- User Experience Design B.S.

**Graduate programs include:**
- Animation M.A. / M.F.A.
- Artificial Intelligence M.S.
- Business Information Technology M.S.
- Computational Finance M.S.
- Computer Science M.S.
- Computer Science Technology J.D./M.S.
- Creative Producing M.F.A.
- Cybersecurity M.S.
- Data Science M.S.
- Digital Communication and Media Arts M.A.
- Documentary M.F.A.
- Experience Design M.A.
- Film and Television M.S. / M.F.A.
- Film and Television Directing M.F.A.
- Game Design M.F.A.
- Game Programming M.S.
- Health Informatics M.S.
- Human-Computer Interaction M.S.
- Information Systems M.S.
- Network Engineering and Security M.S.
- Product Innovation and Computing M.S.
- Screenwriting M.F.A.
- Software Engineering M.S.

**Ph.D. Programs:**
- Computer and Information Sciences
- Human Centered Design

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:

**Career Changers:**
- Cloud Computing and DevOps Program

**Artificial Intelligence & Machine Learning:**
- Advanced Data Science with Python
- Artificial Intelligence for Enterprise
- Data Science for Business
- Machine Learning and Deep Learning
- Robotic Process Automation

**Big Data Analytics:**
- Big Data and NoSQL
- Big Data Using Spark
- Data Analytics with Excel
- Data Analytics with Excel and Tableau
- Data Visualization with Tableau
- Data Science: Programming with Python
- Fundamentals of R
- Fundamentals of Statistics and Machine Learning Using R

**Cinematic Arts:**
- Web Series Development

**Cloud Computing and DevOps:**
- Advanced SQL
- Cloud Computing Technologies
- DevOps

**Cybersecurity:**
- Cybersecurity Risk Management
- Incident Response and Digital Forensics

**Database Technologies:**
- Advanced SQL
- Introduction to SQL
- SQL Server® Business Intelligence
- SQL Server® Database Administration

**Mobile Application Development:**
- iOS Developer

**Software Development and Software Testing:**
- Advanced Python
- Automated Software Testing
- Modern .NET Web Development
- Web Development with JavaScript and HTML5

**APPLICATION PROCEDURE:**
Prospective students should complete the [online application](#) for the program of interest and pay a $40.00 application fee (non-refundable) online during the application process. Alternatively, prospective students may complete the [printable application](#) (PDF) and email it to [ipd@cdm.depaul.edu](mailto:ipd@cdm.depaul.edu), and mail the non-refundable $40.00 application fee (check or money order made payable to DEPAUL UNIVERSITY) to:

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

The words “Microsoft .NET”, “SQL Server”, and “Java” are registered or unregistered trademarks in the United States of America and/or other countries. The Modern .NET Web Development Program at DePaul University is an independent program of study and is not affiliated with, nor has it been authorized, sponsored, or otherwise approved by any other external entities.