# CIW Application Developer Series – Course 1:
## Fundamentals of CGI Using Perl (March 2002)

*Fundamentals of CGI Programming Using Perl* is a 12-hour course that teaches students how to use Common Gateway Interface (CGI) Perl programs and scripts on a Web server. Students will learn how to write print-to-screen scripts, customize Web page hit counters, create and use business forms that interact with text files, manipulate data in a database, work with a relational database via Open Database Connectivity (ODBC), and explore Web server security issues related to CGI files.

## Topics

### Application Development Fundamentals
The Application Development Process
Platforms, Languages and Protocols
Client-side Versus Server-side Scripting
Hypertext Transfer Protocol

### Introduction to CGI and Perl
Web Architecture Overview
What Is CGI?
Why Use CGI?
What Is Perl?
Why Use Perl?

### Creating a Simple Script
Key Concepts and Syntax

### Perl Fundamentals
Accessing Environment Variables
Using CGI.pm to Access Environment Variables
The *if* Statement
Logical Expressions
Pattern Matching
Perl Arrays
Passing Values to Functions
Associative Arrays
Loops

### Perl File Input and Output Capabilities
File IO Using File Handles
File Modes
Using Files in Scripts
Creating a Hit Counter

### Controlling Processing and Output
Introduction to CGI.pm
Incorporating HTML into Perl using CGI.pm
Using CGI.pm to Access Form Data
Processing User-Entered Data
Using One File to Create and Process an HTML Form
Using Perl to Validate Form Input
Testing Your Script Offline

### Saving User-supplied Data to a File
Saving Form Data to a File
Modifying Form Data
Pattern Matching Revisited

### Reading a File
Introduction to Data Reading
Pattern Matching with Regular Expressions
Substitution

### Introduction to Databases
Introduction to Database Programming
Four Steps to Interacting with Databases
Connecting to Databases
Quoting Revisited
Querying Table and Field Names
Web Database Query Example

### Deleting and Inserting Database Records
Modifying Data in a Database
The *do* Method
Web Database Control Example

### CGI Security Issues
Type of Attacks
Securing the CGI Script
Securing the Server
Securing Form Data
Securing Data Passed to Commands

### Resources (Appendix)
Installing Apache Server
Installing Perl on UNIX and Win 32
Requirements Documents

## Target Audience
Webmasters, software developers, application programmers, client/server developers, and desktop publishers.

## Job Responsibilities
Create interactive Web pages using client- and server-side Web applications; access relational database systems from Web applications; implement applications using component technology; and create parameters for environment variables.

## Prerequisites
Students must have CIW Foundations certification or equivalent experience, and have completed the Web Languages series (*JavaScript Fundamentals* and *Perl Fundamental)* or have a working knowledge of client-side scripting, JavaScript or VBScript.

## Duration
12 hours