The goal of this course is to provide students with the knowledge and skills they need to develop C# applications for the Microsoft .NET Platform. The course focuses on C# program structure, language syntax, and implementation details.

C# was created to be the programming language best suited for writing enterprise applications for .NET. C# combines the high productivity of Microsoft Visual Basic with the raw power of C++. It is a simple, object-oriented, and type-safe programming language that is based on the C and C++ family of languages.

Skills Gained

After completing this course, students will be able to:

- Explain the purpose of the .NET Framework, and understand how to use C# and Visual Studio 2010 to build .NET Framework applications.
- Understand the syntax of basic C# programming constructs.
- Create and call methods in a C# application.
- Catch, handle and throw exceptions.
- Perform basic file I/O operations in a C# application.
- Create and use new types (enumerations, classes, and structures), and understand the differences between reference types and value types.
- Control the visibility and lifetime of members in a type.
- Use inheritance to create new reference types.
- Manage the lifetime of objects and control the use of resources.
- Define properties and indexers to encapsulate data, and define operators for this data.
- Decouple an operation from the method that implements an operation, and use these decoupled operations to handle asynchronous events.
- Use collections to aggregate data, and use Generics to implement type-safe collection classes, structures, interfaces, and methods.
- Implement custom collection classes that support enumeration.
- Query in-memory data by using LINQ.
- Integrate code written by using a dynamic language such as Ruby and Python, or technologies such as COM, into a C# application.
Who Can Benefit

This course is intended for experienced developers who already have programming experience in C, C++, Visual Basic, or Java and understand the concepts of object-oriented programming. This course is not designed for new programmers; it is targeted at professional developers with at least 12 months experience of programming in an object-oriented environment.

Prerequisites

Before attending this course, students must have:

- At least 12 months experience working with an Object Oriented language
- Have C++ or Java knowledge:
  - Creating Classes
  - Inheritance and Abstraction
  - Polymorphism
  - Interfaces
  - Exceptions
- Knowledge of the Visual Studio IDE.