

## **Diploma in Programming**

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A computer programming qualification allow candidates to work in a diverse industry within the computer technology environments. Computer programmers are in high demand in today's technologically advancing industries, and candidates undertaking the computer programming course will receive formal, hands-on computer programming training that is necessary for today's growing market. Each programming language requires strong mathematical abilities and understanding technical concepts, with direct application for a variety of software and computer programs.

Why does the course exists – Everything to do with computers is based on programming. The course enable candidates to explore a variety of computer languages, which helps immensely in understanding computing in general and also when looking for employment.

*How it fits into the larger programme* – Programming is at the *core* of computing. For a nation to be fully computerised, programmers have to play a centre role. Programmers write programs which enable computers to switch on, process data and produce information. Without programmers, there would be no computers, mobile phones, planes, microwaves, digital television etc!

For whom it was designed – Candidates who complete the Diploma in System Design.

*How it will benefit candidates* – Computer programming training lays the foundation for a variety of career options for prospective computer programmers, research analysts, and database administrators.

## Subjects:

- Programming Principles and Paradigms
- C Programming
- VB .Net Programming
- C++ Programming
- Java Programming

**Programming Principles and Paradigms** - examines the principles and underlying programming grammatical analysis and syntax.

**C Programming** - a popular and widely used programming language for creating computer programs. Programmers around the world embrace C because it gives maximum control and efficiency to the programmer. C was initially used for system development work, in particular the programs that make-up the operating system. C is mainly used because it produces code that runs nearly as fast as code written in assembly language(a low level programming language). C Programming is used to create: operating systems; language compilers; assemblers; text editors; print spoolers; network drivers; modern programs; data bases; language interpreters and utilities.

**VB .NET Programming** - the .NET Framework is Microsoft's application development platform that enable developers to easily create Windows applications, web applications, and web services

using a myriad of different programming languages, and without having to worry about low-level details like memory management and processor-specific instructions. Visual Basic is a computer programming system developed and owned by Microsoft. Visual Basic was originally created to make it easier to write programs for the Windows computer operating system. The basis of Visual Basic is an earlier programming language called BASIC that was invented by Dartmouth College professors John Kemeny and Thomas Kurtz. Visual Basic is often referred to using just the initials, VB. Visual Basic is easily the most widely used computer programming system in the history of software.

C++ - created in 1983 by Bjarne Stroustrup, C++ was designed to serve as an enhanced version of the C programming language. C++ is object oriented and is considered a high level language. However, it features low level facilities. C++ is one of the most commonly used programming languages. The development of C++ actually began four years before its release, in 1979. It did not start out with the name C++; its first name was C with Classes. In the late part of 1983, C with Classes was first used for AT&T's internal programming needs. Its name was changed to C++ later in the same year. C++ was not released commercially until the late part of 1985. Developed at Bell Labs, C++ enhanced the C programming language in a variety of ways. Among the features of C++ are classes, virtual functions, templates, and operator overloading.

Java — is a high-level programming language developed by Sun Microsystems. Java was originally called OAK, and was designed for handheld devices and set-top boxes. Oak was unsuccessful so in 1995 Sun changed the name to Java and modified the language to take advantage of the burgeoning World Wide Web. Java is an object-oriented language similar to C++, but simplified to eliminate language features that cause common programming errors. Java source code files (files with a .java extension) are compiled into a format called bytecode (files with a .class extension), which can then be executed by a Java interpreter. Compiled Java code can run on most computers because Java interpreters and runtime environments, known as Java Virtual Machines (VMs), exist for most operating systems, including UNIX, the Macintosh OS, and Windows. Bytecode can also be converted directly into machine language instructions by a just-in-time compiler (JIT). Java is a general purpose programming language with a number of features that make the language well suited for use on the World Wide Web. Small Java applications are called Java applets and can be downloaded from a Web server and run on the PC by a Java-compatible Web browser, such as Firefox or Internet Explorer.