Take your next step now!

Follow through on your decision to enhance your life and your future prospects by enrolling in one of INTEC’s Computer Programming courses today!

Why study with us?
• Quality study material designed specifically for home study.
• The freedom to study at YOUR own pace, where and when it suits YOU.
• The widest range of courses for today’s world.
• Free consultations with INTEC’s career counselling and development specialists.
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• The convenience of online enrolment, contact and advice.
• Affordable, easy payment options.
• Ongoing study support and attention from qualified tutors.

Umalusi Accreditation
INTEC College (Pty) Ltd has been awarded provisional accreditation by Umalusi. Umalusi is the Council for Quality Assurance in General and Further Education and Training in South Africa - see www.umalusi.org.za
Umalusi Provisional Accreditation No: FET 00037 PA

DHET Registration
INTEC College (Pty) Ltd has been granted provisional registration by the Department of Higher Education and Training as a private FET College, until 31 December 2014.
Provisional registration No. 2008/FE07/025 - see www.dhet.gov.za. For further information please refer to our website: www.intec.edu.za
INTEC College (Pty) Ltd is committed to meeting legislative requirements regarding accreditation and registration of private education and training providers in South Africa.

Wishing you every success in your studies and your future!

Phillip Slatter
INTEC College Principal

go to: www.intec.edu.za or email: info@intec.edu.za

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INTEC College (Pty) Ltd FET 00037 PA is a member of both the National Association of Distance Education Organisations in South Africa (NADEOSA) and the Association of Private Providers of Education, Training and Development (APPETD).
INTEC is a Registered Credit Provider: NCRCP 2325

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Computer Programming

Build your future the INTEC way
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- Please note: Internet access is required for all computer programming courses.
- All Microsoft software consists of OEM (Original Equipment Manufacturer) versions.
Computer Programming

Introduction
No matter what course you decide on, with INTEC College you can take your first step towards a lucrative career in the exciting world of Computer Programming. Established programmers can improve their existing careers and progress by enrolling for one of our advanced courses.

Programme Types offered at INTEC College

**National Qualifications** are credit-bearing qualifications registered on the NQF (National Qualifications Framework) and accredited by a Quality Assurance Body, such as a SETA (Sector Education and Training Authority). A skills programme is an accredited component of a national qualification.

**Agent Programmes** are programmes for which INTEC offers tuition, but where INTEC does not issue the final certificate. The Agent body issues the final certificate and manages the final examinations.

**INTEC Programmes** are INTEC's own programmes that are not linked to the NQF and are not credit-bearing. However, they are in high demand and carry the approval of the INTEC Academic Board. INTEC Programmes fall into FIVE categories:

- **INTEC Career Programmes** are INTEC's own programmes that are designed to teach you the skills and knowledge to succeed in a particular career.
- **INTEC Career Booster courses** are continuous professional development (CPD) short courses that help you add to your current professional knowledge in a particular field, and hence boost your abilities within your career.
- **INTEC Career Starter courses** are short courses that introduce you to a particular field or career, and that offer you the opportunity to explore an interest or a skills set without having to enrol on a full programme.
- **INTEC Job Creator courses** are designed to refine your skills in a particular field of interest; to teach you how to make a living from a particular skill, interest or hobby, and to help you start your own business.
- **INTEC Self Enrichment courses** are offered for self enrichment purposes. They will add value to your experience of life in a particular chosen field of interest.

No matter what course you decide on, with INTEC College you can take your first step towards a lucrative career in the exciting world of Computer Programming. Established programmers can improve their existing careers and progress by enrolling for one of our advanced courses.
INTEC’s Introduction to Programming course tackles the subject of software design by using modern programming techniques and pseudocode to develop a solution algorithm. It aims to teach entry-level programmers the essential programming practice of design before construction, as well as good programming skills for solving business problems.

Too often, programmers launch straight into the code of their chosen programming language, instead of concentrating on the actual problem at hand. They can become bogged down with the syntax and format of the language, and often spend many hours getting the program to work.

In this course the programmer will learn how to define the problem properly, how to divide it into modules, how to design a solution algorithm and how to prove the algorithm’s correctness before commencing any program coding.

Programme Type
The INTEC Introduction to Programming Certificate is part of the INTEC Career Starter Series. The INTEC Introduction to Programming Certificate is an INTEC certificate. This programme is approved by the INTEC College Academic Board.*

Computer Requirements
Access to a PC and the Internet for the purpose of communicating with tutors and submitting assignments via email.

Entrance Requirements
Grade 10 (Std 8) or equivalent with PC Literacy using Windows operating systems or relevant work experience.

Course Duration
You should be able to complete this course within 12 months.

Course Content
- Program Design
- Pseudocode
- Developing an Algorithm
- Selection Control Structures
- Repetition Control Structures
- Pseudocode Algorithms Using Sequence,

* This programme does not lead to a qualification on the NQF.
• Selection and Repetition
• Array Processing
• First Steps in Modularisation
• General Algorithms for Common Business Problems
• Communication Between Modules, Cohesion and Coupling
• An Introduction to Object-oriented Design
• Object-oriented Design for More Than One Class
• Object-oriented Design for Multiple Classes

Assessment
You are required to complete and submit all the assignments to the college for marking. All assignments must be successfully passed in order to obtain the award.

Award
On successful completion of this course, you will receive your INTEC Introduction to Programming Certificate.

Kit Items
• Textbook supplied

*INTEC College reserves the right to change the kit items without prior notice.
This course has been designed as a comprehensive hands-on introduction to Visual Basic 2010, starting with fundamentals (for beginners) and working through to advanced topics and will also enable you to plan and create your own interactive Windows applications. You will use Visual Basic 2010, an object-oriented and event-driven language, to learn programming concepts.

Programme Type
The INTEC Introduction to Visual Basic .NET 2010 Certificate is part of the Career Starter Series. The INTEC Introduction to Visual Basic .NET 2010 Certificate is an INTEC certificate. This programme is approved by the INTEC College Academic Board.*

Entrance Requirements
Grade 10 (Std 8) or equivalent, or relevant work experience with computer literacy using a Windows operating system.

Course Duration
You should be able to complete this course within 12 months.

System requirements
It is essential that you have access to a personal computer (PC) to complete this course. You also need access to the Internet. You must have Microsoft Windows installed on your computer. Your textbook was written using Microsoft Windows 7.

Minimum Hardware requirements
• A Pentium 4 processor, 1.6 GHz or higher.

Software requirements

* This programme does not lead to a qualification on the NQF.
Course Content
• An introduction to Visual Basic .NET 2010
• Creating a user interface
• Memory Locations and Calculations
• Making Decisions in a Program
• More on the Selection Structure
• Repeating Program Instructions
• Repetition Structure
• Sub and Function Procedures
• Arrays
• String Manipulation and Menus
• Structures and Sequential Files
• Access Databases and LINQ
• Creating Web Applications
• Creating Classes and Objects

Assessment
You are required to complete and submit all the assignments to the college for marking. All assignments must be successfully passed in order to obtain the award.

Award
On successful completion of this course, you will receive your INTEC Introduction to Visual Basic .NET 2010 Certificate.

Kit Items
• Textbook supplied
• Software:
  Visual Studio 2010 is obtainable from INTEC.

*INTEC College reserves the right to change the kit items without prior notice.
Enter the world of C# Programming. Understand the discipline of programming and learn how to develop programs in C#. Basic programming concepts are covered, including data representation and control structures. This course provides detailed discussions of object-oriented programming and object-oriented design issues and also covers GUIs (graphical user interfaces) and event-driven programming.

Programme Type
The INTEC Introduction to C# 2010 Programming Certificate is part of the INTEC Career Starter Series. The INTEC Introduction to C# 2010 Programming Certificate is an INTEC certificate. This programme is approved by the INTEC College Academic Board.*

Entrance Requirements
Grade 10 (Std 8) or equivalent, or relevant work experience with computer literacy using a Windows operating system.

System Requirements
A personal computer with Visual Studio software installed to complete this course. Internet access is required. You must have one of the following operating systems installed on your computer:

- Microsoft Windows XP;
- Microsoft Windows Vista; or
- Windows 7

Minimum Hardware Requirements
- 1.6 GHz CPU, 192 MB Ram, 1024x768 display
- 5400-RPM hard disk

Software Requirements
- Microsoft Visual Studio 2010

Course Duration
You should be able to complete this course within 12 months.

Course Content
- A first program using C#
- Using data
- Using GUI objects and the Visual Studio IDE
- Making decisions
- Looping
- Using arrays
• Using methods
• Advanced method concepts
• Exception handling
• Using classes and objects
• Introduction to inheritance
• Exception handling
• Using controls
• Handling events
• Files and streams
• Using LINQ to access data in C# programs

Assessment
You are required to complete and submit all the assignments to the college for marking. All assignments must be successfully passed in order to obtain the award.

Award
On successful completion of your this course, you will receive your INTEC Introduction to C# 2010 Programming Certificate.

* This programme does not lead to a qualification on the NQF.

Kit Items

• Textbook supplied

• Software:
  Visual Studio 2010 is obtainable from INTEC.

*INTEC College reserves the right to change the kit items without prior notice.
Due to the widespread application of Java, it is rapidly becoming the backbone of e-business. Skilled developers are in high demand. This course will help you, as a first-time computer programmer, to understand the significance of Java, before moving on to developing programming skills in the areas of object-oriented and Java Technology. By the end of the course, you will be able to create programmes using a wide range of Java Technologies.

Programme Type
The INTEC Introduction to Java Programming Certificate is part of the INTEC Career Starter Series. The INTEC Introduction to Java Programming Certificate is an INTEC certificate. This programme is approved by the INTEC College Academic Board.*

Entrance Requirements
Grade 10 (Std 8) or equivalent with PC literacy using a Windows operating system and web browsers, or relevant work experience.

Optional Requirements
The following optional requirements will assist you in your studies:
• Basic knowledge of Web development using HTML;
• Basic introductory knowledge of programming in any other programming language;
• Basic knowledge of SQL and Database Management software, such as Microsoft Access or Microsoft SQL Server; and access to a computer that runs Microsoft Access.

Hardware and Software Requirements
A personal computer (PC) that runs the Windows operating system and the Internet.

Standard PC Setup + Access to Java Software.

* This programme does not lead to a qualification on the NQF.
Course Duration
You should be able to complete this course within 12 months.

Course Content
• Introduction to Java and Programme Design
• Creating a Java Application and Applet
• Manipulating Data Using Methods
• Decision-making and Repetition with Reusable Objects
• Arrays, Loops, and Layout Managers Using External Classes
• Creating a Java Calculator
• Designing User Interfaces with Swing
• Reading and Writing Data
• Using Collections and Strings in a Reusable Class
• Understanding Abstract Classes and Interfaces
• Accessing Databases using JDBC
• Utilising Servlets for Web Applications

Assessment
You are required to complete and submit all the assignments to the college for marking. All assignments must be successfully passed in order to obtain the award.

Award
On successful completion of this course, you will receive your INTEC Introduction to Java Programming Certificate.

Kit Items
• Textbook supplied

*INTEC College reserves the right to change the kit items without prior notice.
The Sun Certified Programmer for Java Platform, Standard Edition 6 certification exam is for programmers experienced in using the Java Programming language. Achieving this certification provides clear evidence that a programmer understands the basic syntax and structure of the Java Programming language and can create Java technology applications that run on server and desktop systems using Java SE 6.

The Programming Exam - Exam CX-310-065:- is designed to test your knowledge of the Java Programming language. It requires detailed knowledge of language syntax, core concepts and a number of common application programming interfaces. The exam also tests intermediate knowledge of object-oriented design concepts.

Programme Type
Sun Microsystems Certified Programmer for Java Platform is an Agent Programme.

Entrance Requirements
Grade 10 (Std. 8) or equivalent with PC literacy using a Windows operating system, or INTEC Introduction to Java Programming Certificate, or relevant work experience (2 years).

Course Duration
You should be able to complete this course within 12 months.

Course Content
Declarations and Access Control
• Java Refresher
• Identifiers and JavaBeans
• Declare Classes
• Declare Interface/Declare Mass Members

Object Orientation
• Encapsulation
• Polymorphism
• Overriding/Overloading
• Reference Variable Casting
• Implementing an Interface
• Legal Return Types
• Constructors and Initialisation
• Statics
• Coupling

Assignments
• Stack and Heap
• Literals, Assignments and Variables
• Passing Variables into Methods
• Array Declaration, Construction and Initialisation
• Using Wrapper Classes and Boxing
• Overloading
• Garbage Collection

Operators
• Java Operators
Flow Control, Exceptions and Assertions
- If and Switch Statements
- Loop and Iterators
- Handling Exceptions
- Common Exceptions and Errors
- Working with Assertion

Strings, I/O, Formatting and Parsing
- String, StringBuilder and StringBuffer
- File Navigation
- Serialisation
- Dates, Numbers and Currency
- Parsing Tokenizing and Formatting

Generics and Collections
- Overriding hashCode and equals
- Collections
- Using the Collections Framework
- Generic Types

Inner Classes
- Inner Classes
- Method Local Inner Classes
- Anonymous Inner Classes
- Static Nested Classes

Threads
- Defining, Instantiating and Starting Threads
- Thread States and Transitions

Development
- Using the Javac and Java Commands
- JAR Files
- Using Stat Imports

Assessment and Exam Information
This course is externally examined at a Pearson Vue testing centre. See the following website to allocate your nearest testing centre: www.pearsonvue.com. Please note that your exam fee is not included in your tuition fee.

Award
On successful completion of your external exams, you will receive your internationally recognised Programmer for Java Platform Certification, from Sun Microsystems.

Kit Items
- Textbook supplied

*INTEC College reserves the right to change the kit items without prior notice.
INTEC Full Programme: Fundamentals of Programming

This array of introductory courses will teach you the fundamentals of the various programming languages.

It aims to teach the following:
- Entry-level programmers the essential programming practice of design before construction, as well as good programming skills for solving business problems
- Ability to create your own interactive Windows applications
- Skills to develop programs in C# and teach discipline of programming
- An understanding of Java

Entrance Requirements
Learners must meet the minimum requirements of each of these courses.

Course Content
- Introduction to Programming
- Introduction to Visual Basic .NET 2010
- Introduction to C# 2010 programming
- Introduction to Java programming

Course Duration
You should be able to complete this course within 24 months.

Assessment and Award
All the required assignments must be completed and sent to the College for marking. All assignments must be successfully passed in order to obtain the award.

On successful completion of your assignments you will receive the following:
- An INTEC Introduction to Programming Certificate
- An INTEC Introduction to Visual Basic .NET 2010 Certificate
- An INTEC Introduction to C# 2010 Programming Certificate
- An INTEC Introduction to Java Programming Certificate
Choose your preferred programming language and take it to the next level.

Programme Type
The INTEC Computer Programming Professional Certificate is part of the INTEC Job Creator Series. The INTEC Computer Programming Professional Certificate is an INTEC Professional Certificate. This programme is approved by the INTEC College Academic Board.*

Course Outcomes
On successful completion of this course, you will have gained the skills you need to start programming in the language of your choice, across a number of industries.

Entrance Requirements
Grade 12 (Std 10) or equivalent, or relevant work experience (2 years) with PC literacy using a Windows operating system.

Course Duration
You should be able to complete this course within 24 months.

Course Content
Compulsory Subjects:
• Introduction to Computer Programming
• Systems Analysis and Design
• Information Systems Management
• How to Start a Small Business

Plus one of the following:
• Introduction to Java and Sun Microsystems Certified Programmer for Java Platform
• Introduction to Visual Basic .NET 2010 and Windows Forms Application Development
• Introduction to Visual C# 2010 and Windows Forms Application Development

Assessment
All the required assignments must be completed and sent to the College for marking. All assignments must be successfully passed in order to obtain the award.

Award
On successful completion of your assignments, you will receive your INTEC Computer Programming Professional Certificate.

* This programme does not lead to a qualification on the NQF.
Further Education and Training Certificate: Information Technology: Systems Development

Programme Type
Further Education and Training Certificate: Information Technology: Systems Development (SAQA ID 78965) is a National Qualification, accredited by Media, Information, and Communication Technologies Sectors Education & Training Authority (MICT SETA).

Entrance Requirements
Grade 11 (Std. 9) or NQF 3 with foundational English and Mathematics, and ability to use Personal computer competently, and competence in the unit standard, “Participate in formal meetings”, NQF Level 2 (ID 14911), or equivalent or a verifiable relevant working experience (2 years).

Course Content
• Communication
• Mathematical Literacy
• Introduction to Computer Programming
• Introduction to Networking Concepts
• Concepts of Computer Architecture
• Introduction to Web Design
• Introduction to System Analysis

Course Duration
You should be able to complete this course within 18 months.

Assessment
Formative and summative assessments will assess all specific outcomes and adhere to all assessment criteria of the unit standards. Once you have successfully been declared competent in all unit standards, you will be required to write and pass a Final Integrated Summative assessment, of relevant units, to achieve this full programme in Systems Development.

Award
INTEC College will upload your details and results onto the National Learner Record Database [NLRD], when you have been declared competent. MICT SETA will award you with a statement of results indicating the unit standards that you have been found competent, in this particular qualification. You will also receive a statement of results from INTEC College.
Further Education and Training Certificate: Information Technology: Website Development
Qualification: FETCWebDev (INTEC) NQF 4

Description
Going professional in the Web industry can be as easy as setting up your own web design or doing freelance work from home.

Web development is a broad term for the work involved in developing a website for the internet (World Wide Web) or an intranet (a private network). A more comprehensive list of tasks to which web development commonly refers to include web design, web content development and maintenance, client liaison, network security configuration, and e-commerce development. The Further Education and Training Certificate: Website Development therefore aims to provide the functions of the Internet and web development tools including programs using the Java language, XML and HTML applications. In addition, the programme supports the development of skills and competencies required for creative and eye-catching design via electronic media.

Admission Requirements
Grade 11 (Standard 9) or equivalent, or relevant work experience (2 years).

Duration
You should be able to complete this course within 18 months.

Certification
Upon successful completion of the course, you will receive a Further Education and Training Certificate: Website Development.

Career Opportunities
Students can pursue a career in:
- Website Development/Architecture/Design
- Software Development /Programming/Architecture
- Information Systems
- E-commerce Development
You can complete almost all practice exercises using virtual machines rather than real server hardware. The following hardware is required to complete the lab exercises:

- Personal computer with minimum 1 GHz (x86) or 1.4 GHz (x64) processor (2 GHz or faster recommended)
- 1GB of RAM or more (4GB recommended; 8GB enables you to host all the virtual machines specified for all the practice exercises in the book)
- 15GB free hard disk space (60GB recommended; 80GB enables you to host all the virtual machines specified for all the practice exercises in the book)
- DVD-ROM Drive or DVD Writer Drive
- Super VGA (1024x768) or higher resolution video adapter and monitor
- Keyboard and Microsoft mouse or compatible pointing device

INTEC COMPUTER SCHOOL
Why do a Computer Course with INTEC College?
In today's world, a computer skill, even the most fundamental Word Processing and Data Processing abilities, like using MS Word and MS Excel, could help you when you look for the perfect job.

Interested in working overseas and travel opportunities? Some of INTEC’s computer courses give you the opportunity to achieve an internationally-recognised learning programme. You don’t have to put your life on hold while you are doing an INTEC course.